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ORIGINAL ARTICLES.

THE SEA-AIR TREATMENT OF TUBERCULOSIS OF THE BONES AND GLANDS IN CHILDREN.[1]

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OF NEW YORK.

DURING the past twelve months I have had the opportunity of watching the tonic effects of sea air upon children suffering from tuberculosis of the bones and glands, and I trust that a brief account of my observations may be of interest to the members of this Association.

For more than twenty years the hygienic treatment of pulmonary tuberculosis in adults has received constantly increasing attention in Europe and this country, but the form of tuberculosis peculiar to children has been practically neglected, except in its surgical aspects. France is almost the only country in which there has been any systematic attempt to provide sanatoria for children in the country, and particularly at the seaside. As long ago as 1861, the city of Paris established at Berck-sur-Mer, on the north coast of France, a hospital exclusively for children suffering from tuberculous disease of the bones, joints and glands. It contains over 600 beds. There are also two private hospitals at Berck, one founded some years ago by Baron Rothschild and maintained by his widow. It is a thoroughly well-equipped modern hospital, and contains 100 beds. The other private hospital is the Cazin Perrochaud, of like character, and with accommodations for about 200 patients. The children in these hospitals are from the poorest quarters of Paris. At St. Pol-sur-Mer, also on the north coast of France, is a sanatorium for children maintained by the manufacturing city of Lille. It contains 450 beds, but is about to be replaced by a larger sanatorium of 900 beds. In these hospitals the régime is the same. The patients are kept out of doors through the day on the beach, or on the verandas, which are covered overhead, but open in front and at the sides. The diet is abundant and nutritious, there being four meals a day, consisting of bread and milk, soup, meat, eggs, vegetables and fruit. The patients are allowed as much milk as they like.

The other French hospitals for children, at Hendaye, Ormesson, Villiers-sur-Marne and Noisy le Grand, receive mainly cases of pulmonary tuberculosis, hence I shall not consider them here, except to state that they are well administered and accomplish a great deal of good.

The only institution of the kind in England is the Royal Sea Bathing Hospital at Margate, with a total capacity of 150 beds. Unfortunately, adults are admitted as well as children, so that only about one half the beds are available for children. It is also to be regretted that the hospital is not open to children under six years of age. It is, of course, most important that patients should enter the hospital as soon as the very earliest symptoms of the disease are observed. At the French sanatoria they are received as early as two years of age, and it is at this age that so many children with disease of the joints may be saved permanent deformity by prompt operation and after treatment in good surroundings. At six years of age a child with tuberculous disease is often past cure. The hospital is also hampered by the so-called letter system, through which many of the beds are filled by chronic and incurable cases which could be equally well cared for at other institutions. The hospital is, however, well conducted and renders efficient service, in spite of the drawbacks I have mentioned. It is the opinion of the senior surgeon, after fifteen years of constant work in the wards, that the knife plays a very secondary part to climatic and general influences. In many cases the shock of the operation so diminishes the vitality and power of resistance of the patient that the tubercle bacilli are enabled to start a new focus of trouble elsewhere. When, however, operations become absolutely necessary, progress is much more rapid when patients can live an outdoor life in the open air.

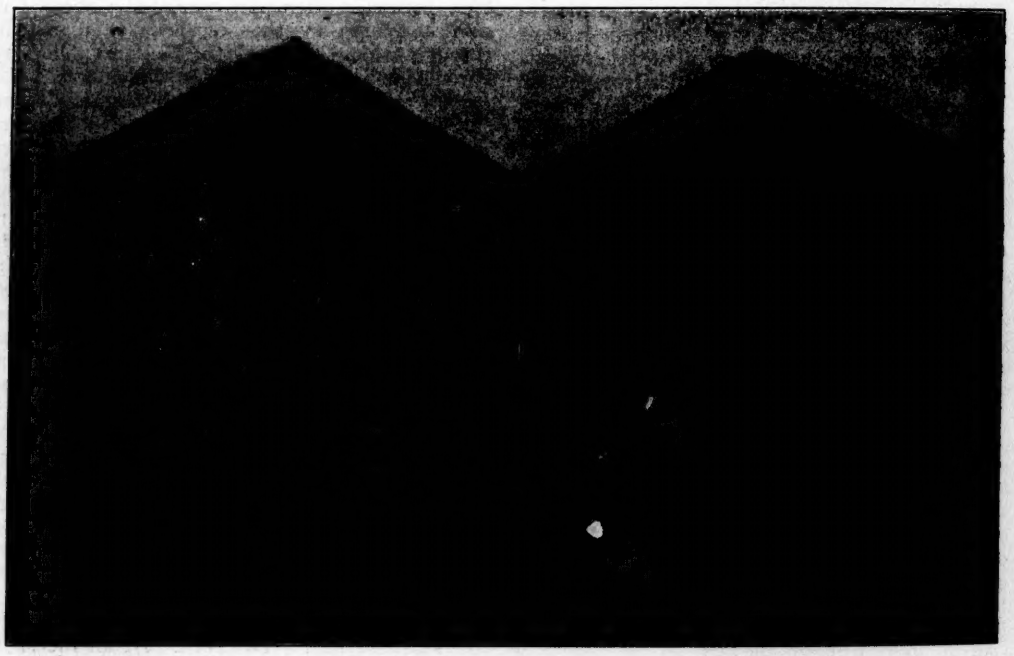
About a year ago the New York Association for Improving the Condition of the Poor, hearing of the methods followed at the French seaside sanatoria, requested Mr. John Seely Ward, Jr., one of its vice-presidents, to visit the institutions at Berck. On Mr. Ward's return to this country his report of his observations was so favorable that the Association decided to establish at least a temporary hospital for tuberculous children on the seashore near New York. At all the sanatoria visited by Mr. Ward the testimony of the attending surgeons was the same,—that residence at the seashore, with the greater part of the twenty-four hours spent in the open air, did more for the children than could be accomplished even in the best-appointed hospitals in the cities. The strengthening effect of the sea air was such that operations, such as must constantly be resorted to in tuberculosis of the bones, joints and glands, when the patients live in cities, are rarely necessary, provided the cases remain for a sufficient length of time at the seashore. It is the belief of these French observers that the sea air is much more invigorating to the children than inland air.

In order to carry out the ideas of Mr. Ward, the Association, in the early part of June, 1904,

[1] Read by title at the Annual Meeting of the American Climatological Association, at Detroit, June 29, 1905.

leased a plot of ground on the shore of Coney Island adjoining Sea Breeze, the Summer Home which has been maintained for so many years by the Association for the children of the tenements of the city. It was determined that for the purposes of the experiment a tent camp should be built, and some tent cottages were constructed, four to be used for wards, the others for nurses, dressing-room, dining-room, kitchen and isolating room. Eight of the tents were arranged in an octagon, with a board walk connecting them and enclosing a playground of sand thirty feet wide. The tents had wooden floors raised eighteen inches from the ground, and sides of wood for the lower three feet. Some fifty-four children in all were taken care of during the summer.

Fig. 1.



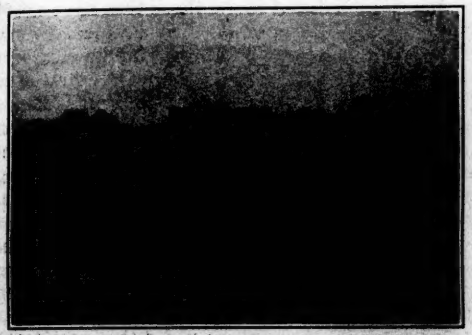
View of Tent Camp Hospital.

These children came, some of them direct from the tenements where they had been under the treatment of private or dispensary physicians; others from the different special hospitals in the city, such as the Hospital for the Ruptured and Crippled, the Orthopedic Hospital, the Laura Franklin Hospital, and the orthopedic wards of the Post-Graduate Hospital. They were suffering from hip disease, in various stages, Pott's disease, disease of the long bones, tuberculosis with open sinuses of the ankle; in fact, all the varied forms of bone tuberculosis, as well as tuberculosis of the glands. Not only were the children kept in the open air during the day on the beach, or in rainy weather under a sheltered platform adjoining the tents, but at night the tents themselves were thoroughly ventilated by wide-open windows at both ends and the sides, as well as openings in the roof protected by the usual canvas fly. Following the custom prevailing in the French hospitals, a very generous dietary was provided. In addition to the three regular meals, the children received milk and crackers in the middle of the morning, and milk and crackers or some other form of nourishment in the middle of the afternoon. No attempt was made to select the cases; they were of the usual grade of severity that is found in the orthopedic wards of the children's hospitals of the city. Improvement began in the children at once. When they came most of them were pale, languid, rather fretful, with uncertain appetite, and with a disinclination to play or even to talk. Within a week their spirits improved; they slept soundly, awoke with an appetite, were ready to join in play, and it was soon difficult to believe—but for the visible evidence of disease, such as deformity and impairment of motion, and the presence of bandages, braces and plaster-casts—that they were other than the ordinary children one sees at seashore resorts. Their faces became rosy, the circulation improved, and the gain in weight was almost constant. Several patients who were unable to walk when they came, at the end of two or three months were able to run about and play with the others. All the patients were bathed in the salt water every day, and some of them soon learned to take care of themselves in the water. In the case of one boy

who had an open sinus of the ankle, which had been discharging for several years, the wound closed permanently, and he walks about now, helping in the case of the other children without even any stiffness of the joint being apparent.

It was not the intention of the Association to maintain a permanent hospital, but only to demonstrate the value of sea air in the treatment of surgical tuberculosis in children, in the hope that New York City might be convinced that it was

Fig. 2.



Group of Children on Shore—*First* Summer.

its duty to establish such a place for the thousands of poor children needing it. When the autumn came, however, and it was evident that the children could no longer be kept in tents, those most interested were reluctant to send them back to the old conditions in the city from which they came. It was feared that most, if not all, of them would soon relapse and be almost, if not quite, as badly off as they were before. At Berck the surgeon-in-charge is of the opinion that three years are necessary to effect a permanent cure of an established case of tuberculosis of the bones or joints. After much consideration and discussion, it was finally decided to take one of the buildings at Sea Breeze and make it over so that it would answer for hospital purposes for at least some of the children. The partitions between several rooms were removed, and four dormitories were thus provided which are sufficient to accommodate about forty-five children. Those patients who were least in need of further treatment, or whose parents were best able to care for them at home, were permitted to return to the city. Thirty-two cases were retained, and this number was raised to forty-three before the winter was over. It was determined that with the advent of cold weather the open-air life of the children should be rigorously maintained, and they were kept out of doors practically all day long. Even in stormy weather there were some sheltered nooks on the piazzas, and not even a snowstorm drove them within doors. On Christmas afternoon a large bonfire was built on the beach, and the children were gathered about it, listening to stories of "Brer Fox and Brer Rabbit," told by Dr. Charlton Wallace, the orthopedic surgeon who is giving constant care to the children. It was snowing hard all the time; but no one seemed to mind it, nor was the worse for it.

Whenever I have visited the hospital during the past winter I have not only found the children occupying themselves in one way or another on the grounds, about the houses, or on the beach, but the beds of those who could not be up were on the open porch. At night, as well as throughout the day, the windows of the wards are wide open, the temperature in them at night ranging from 12 to 40 degrees, not varying materially from that outside. They are closed one-half hour morning and evening, while the children are being washed and dressed. The children are, of course, warmly clothed, wearing hoods on their heads and mittens on their hands. They sleep soundly from bedtime until six in the morning. One morning during the winter they awoke, and, much to their surprise, found snow upon the coverlets which had drifted in during the night without their knowledge. Now that summer has again come, the sashes of the windows have been removed, that the children may have the fresh air to which they have become accustomed.

In the French hospitals it is the practice to close the windows of the wards at night in the cold weather, so that the air is by no means what it should be, and the gain in health of the chil-

Fig. 3.

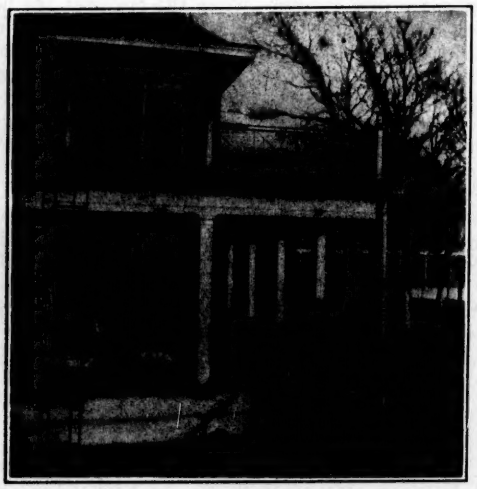
Flashlight Photograph at 8 P.M. in Ward in February. Note the Open Windows.

dren must be due to the fresh air enjoyed during the day, together with the abundant food and good care they receive.

On one of my visits to Sea Breeze, and while talking with one of the children who held my hand, I took off my glove; she at once said, "How cold your hand is!" When I replied, "Does it seem cold to you?" she answered, "Yes, see how warm my hands are." Thereupon the other children crowded around, putting out their

hands for me to feel them, and in every case they were as warm as though they had just been held before a fire. As their gloves or mittens were in most cases hanging from their wrists, this was convincing evidence of the vigor of their circulation. A lady who was with me, noticing a pale child in the midst of a group of children, asked what was the matter with him, he "looked so white." The other children answered at once, "Oh, he only came down yesterday." The others were as red and rosy as if they were in perfect health and had been tanned by a summer sun.

Fig. 4.



Daily Scene in Winter—Cribs on Porch.

As soon as it was decided to keep the children through the winter, steps were taken to secure a teacher from the Brooklyn Board of Education. All the patients, including those of the kindergarten age, receive from one to two hours' instruction a day. The lessons are given in a large, well-ventilated room, and when they are over the children are returned to the open air.

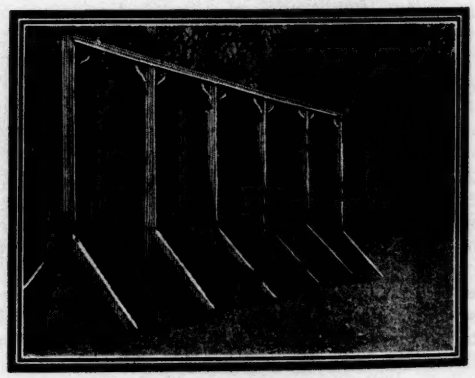
I have spoken of the uniform improvement in the general condition of the children, as shown in their appearance, their circulation, their spirits, their appetite, their sound sleep, and their gain in weight, all beginning at once with their coming to the seashore. The improvement in the local lesions has naturally required a longer time to manifest itself, but now at the end of a year we can report marked progress in nearly all the cases, amounting in some to an apparent cure. A few operations have been necessary, but they have not been of such magnitude as to depress the patients. In fact, the rapid progress after operation has been one of the most striking results of the open-air treatment. This accords with the experience of the surgeons at Berck and Margate. I shall not attempt to give a statement in detail of the results in the individual cases, but shall refer to some features common to all, and then describe briefly a few cases of especial interest.

Of the 43 cases now in the hospital eight have tuberculous glands, and 35 have disease of the spine, or of the hip, knee, ankle or shoulder-joints. Six of the eight glandular cases had deep sinuses on entrance, varying from 2 to 4 in each case, amounting to 16 in all. All of the 8 cases have improved markedly. The glands have not entirely disappeared, but the number of sinuses has been reduced to three.

Of the 35 joint cases, 22 had sinuses leading down to the bone, 57 sinuses in all. This number has been reduced to 44, those that have closed being apparently permanently healed. Only one patient has grown worse, and he has been in the hospital but four months. On entrance he had double psoas abscess due to Pott's disease of long duration. Very few of the cases were in an early stage, many of them having been sent to the hospital because they were steadily losing ground in the city, even under the most favorable conditions that could be obtained there.

Two of the children with Pott's disease in the cervical region who came last summer, wearing a plaster jacket with head support, have left off the head support entirely, and now wear only a plaster corset. They are among the most active and vigorous of the children in the hospital. It is proposed soon to leave off the corset at night, and it is probable that in another year it may be

Fig. 5.



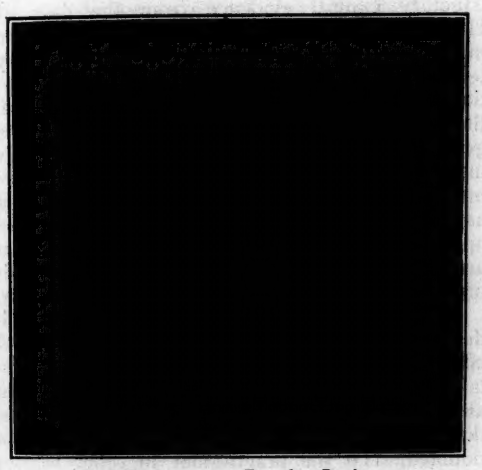
Winter Amusements of Children.

dispensed with entirely. The following cases are selected for a more detailed description, not simply because of the results obtained, but because they illustrate the serious character of the cases that have been under treatment.

Case I.—Margaret D., four years old, admitted September 2, 1904. Tuberculous ankle-joint. The disease began in March, 1903, and in April of that year the patient was admitted to a children's hospital in New York, with the diagnosis of tuberculosis of the ankle-joint. During her stay in the hospital several operations were performed,

including repeated curetting of the tibia. The child, however, failed to improve, and amputation of the leg was advised. The parents refusing their consent, the patient was discharged from the hospital in June, 1904, and in September following she was brought to Sea Breeze. On admission there were five discharging sinuses in the ankle, and the child weighed but 24½ pounds. She soon began to improve, one sinus after another closing, until now there is but one sinus

Fig. 6.



Bed-Patients on Porch—Spring.

open, and the weight has increased to 35½ pounds, a gain of 45 per cent. The patient wears a Thomas knee-brace, and is able to walk alone.

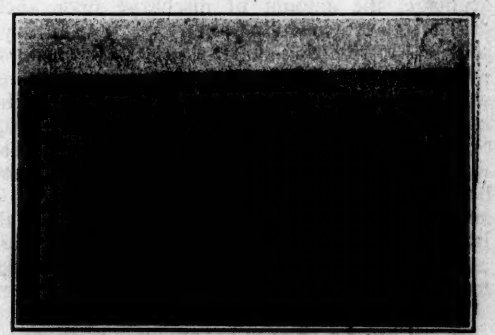
Case II.—Mariano A., thirteen years old, admitted June 10, 1904. Tuberculous ankle-joint. The disease began in 1898, and there is a history of four operations in Italy and one in America. On admission there were two deep sinuses, one over each malleolus, with considerable discharge. The boy, though quite lame, walked about, going into the ocean daily, and coming out with wounds packed with sand. Nevertheless, the discharge diminished and by the autumn had entirely ceased. In February, 1905, both sinuses were closed, with only slight oozing from superficial wound on one side. This has now entirely healed, all dressing is omitted, and with the joint anchylosed at an angle of 95 degrees, the boy walks and plays with no noticeable lameness, and has gained 15½ pounds in weight.

Case III.—Mary McG., nine years old, admitted January 17, 1905. Tuberculous knee-joint, of six years' duration. On admission the child was pale and emaciated, and the knee was much swollen, with a profuse, offensive discharge from two sinuses. In March, the condition is noted as much improved, with less discharge from the knee. In April, the patient, wearing a Thomas knee-brace, was able to run and play with the other children, and with no pain. The improvement has continued steadily, with a gain in weight of nearly 7 pounds in 4½ months. The sinuses have not closed, but the discharge is much less and without odor.

Case IV.—Bertha M., eleven years old, admitted June 19, 1904. Tuberculous hip-joint. The disease began five years ago. The patient had been under treatment in several of the children's hospitals of the city. On admission there was anchylosis of the hip, and the patient's condition was noted as poor. She wore an American brace and used crutches in walking. Improvement began at once, and in December the brace and crutches were set aside and a plaster-of-Paris spica was applied. This the patient has worn with comfort ever since, and she is able to go about freely with the other children. Her general condition is excellent, with a gain in weight of 8½ pounds.

Case V.—Albert G., four years old, admitted January 27, 1905. Pott's disease of spine, of two years' duration. On admission the patient had marked kyphos in the middorsal region, several vertebræ being involved. Although wearing a well-fitted plaster jacket, the boy suffered from constant pain. He had paraplegia, being unable to walk and having no control over the bladder and rectum. The plaster jacket was removed, and the patient was placed upon a modified Bradford frame, to which he was strapped day and night. In two months the control of the sphincters was recovered, and he is now able to walk with support under the arms, and has gained 3 pounds and 3 ounces in weight. The photograph (Fig. 8) shows the method of securing

Fig. 7.



Children on Beach—*Second* Summer. Note the Legs.

overextension of the spine, and also the happy, contented look of the patient, in spite of his restrained position.

In the foregoing I have dwelt mainly upon the open-air life of the children, as that is my theme; but in addition they have received the best of orthopedic care from Dr. Wallace. Always watchful, but without meddlesome interference, he has aimed to get the patients up and out and on their feet as soon as possible. How

he has accomplished this he has told in detail in a report presented at the recent meeting of the American Orthopedic Association.[1] I shall refer to only two features of his treatment, which seem to me especially worthy of mention. Instead of braces plaster-of-Paris is used in most cases for the fixation of joints, fenestrae being cut when there are sinuses present. It can be readily understood how this procedure aids in getting the children out of bed. In several cases the application of a spica to the hips has enabled the patients to be about in the open air practically all day long.

Dr. Wallace has also found that tuberculous sinuses heal more readily and permanently when all packing and drainage are omitted, and only a sterile absorbent dressing is applied. As the general instability of these patients is such as to cause them to almost collapse at the thought of having their wounds probed and packed, it led him to believe that they would gain strength and local resistance if they were not nervously upset at the time of each dressing. In the beginning, in order to ascertain whether there would be full drainage, the amount of discharge upon each dressing was carefully noted for several days previous to omitting the packing, and compared with that of the succeeding days when packing was omitted. As there was no diminution in the amount of discharge, he concluded that packing or tubing was not essential to drainage. There was also less danger of infection. In no case has there been an infected wound, nor has a sinus healed when it still contained pus. Dr. Wallace puts this treatment forward as a suggestion, as he does not feel that it has had sufficient trial to give conclusive results.

Fig. 8.

Albert G.—Fifth Month on Extension Frame.

Ontario Board of Health.—The Provincial Board of Health of Ontario will hereafter advocate vaccination and revaccination, a subject which was thoroughly discussed at its regular quarterly meeting in Toronto during the last week of October. An effort will be made to have the Health Act amended to provide for secondary compulsory vaccination. The prevalence of typhoid fever throughout the province was also gone into, as was the care of the men in the lumber camps in the unorganized districts of the province. It was decided to enforce the rules and regulations with regard to physicians being engaged for all lumber camps.

1 See Medical Record, July 22, 1905.

REPORT OF THE COMMITTEE ON THE INFLUENCE OF CLIMATE IN PULMONARY TUBERCULOSIS.[1]

BY CHAS. L. MINOR, M.D., E. R. BALDWIN, M.D., S. E. SOLLY, M.D., C. F. M^CGAHAN, M.D., HENRY SEWELL, M.D., AND NORMAN BRIDGE, M.D.

THE beneficial influence of wisely selected and properly used climatic influences in the treatment of pulmonary tuberculosis has been one of the accepted facts of therapeutics for centuries, attested by an enormous mass of satisfactory clinical evidence from the days of Hippocrates and Celsus until our own. In medicine, however, there is a wise and healthy tendency to take up and re-examine the foundations of our beliefs, and it is not to be regretted, therefore, that in the past few years, since the general profession has been taking such a lively interest in tuberculosis, there has been a movement to question whether the accepted teaching as to the rôle of climate in the disease is founded on proven facts, and your Committee feels that an examination of the bases of our faith in climato-therapy in tuberculosis is therefore timely.

To the observer in the health resort the evidences of the beneficial or curative effects of climate are so many and so apparently irrefutable; he so constantly has occasion to see them and to be convinced of their reality, that he has difficulty in understanding how they can be doubted. To the practitioner in other regions who has often hoped for impossibly good results from climate in hopeless cases and whose experience in the handling of the disease is limited, the relapse of a partly arrested case on its return home or the failure to improve of some case in a resort seems to him to justify such doubts. The former, while having ample clinical opportunity, is apt to be suspected of partiality and of being affected by his personal interests, the latter lacks the clinical opportunity and is thus handicapped in drawing his conclusions. Yet let us remember that, after all, it must be by honestly made and scientifically recorded and interpreted observations of the practitioner in the health resort, combined with the detailed watching and after-study of the case by the home doctor, that this question shall finally be settled, and it is most desirable that these men should get together and study the matter impartially. If we look for the causes of the tendency to doubt the value of climate, they are to be found; *first*, in the unskilful use in the past of climate as a therapeutic measure; *secondly*, in the formerly widely spread belief in a mysterious specific influence of climate which led to a superstitious faith in its unaided powers and therefore to a neglect of those even more important matters, hygiene, diet, instruction and detailed supervision; *third*, in the effect on

1 Before the National Association for the Study and Prevention of Tuberculosis, Washington, D. C., May 18, 1905.

the general profession of their recent and all too limited experience with outdoor treatment at home, which has caused them to go from the extreme of an undue hopelessness in the past to that of an equally unwise hopefulness that any case can be cured in any atmosphere by sleeping out on a porch and eating heartily and freely.

As to the first cause, cases after a diagnosis have too often been sent to a resort to care for themselves with no better instructions than to live outdoors and to take plenty of exercise and food, the doctor forgetting that he would censure any man who would use any of the usual therapeutic measures so carelessly; or, again, the doctor in the resort to whom the patient has been entrusted, has also believed too much in climate and has only too often failed to remember that instruction and supervision are essential elements in a cure, so that he has not always given the case that teaching and control which he should have known were necessary. Such neglect on the part of those supposed to be especially expert is inexcusable, and with an advancing realization by the doctor of his responsibility, should be a rarer and rarer occurrence. Thus, either left to guide their own cases in their ignorance, or insufficiently instructed and taught, too many patients have returned home, their trouble, it is true, arrested, but themselves uninstructed and unfamiliar with the management of their future lives, which is the chief thing on which they must rely thereafter to prevent relapses.

As to the second reason, the belief in the specific effect of climate has been responsible for the sending to resorts of many hopeless cases in which any permanent results could not possibly be expected, and the occasional surprising arrests of a few such cases have only tended to keep up a practice whose generally unfavorable outcome can but throw doubt on the whole method.

As to the third reason, it is well known that when our profession takes up any new method of treatment we are apt at first to be carried away by our enthusiasm, and the open air home treatment of tuberculosis is no exception. While the excellent chances it offers to those who cannot hope to get better conditions should always be dwelt upon, we should also not forget that the addition of climate to the effects of the open-air cure is too valuable to be neglected where it is feasible.

We have too long regarded tuberculosis as an all but hopeless disease, too long trusted to climate without care as a panacea of mysterious powers; so that when, as a result of a dissemination of information on the proper handling of such cases, an improvement in the results of home treatment is inaugurated, we tend to run to the other extreme and to doubt our former deductions from years of careful clinical observation. Let it in passing be remembered to the honor of climato-therapy that from the workers in this line (and especially from the honored president of this Society) have largely emanated the popularization of the hygienic and dietetic cure which is now so widely accepted and which is doing so much good. It is largely those patients sent back from resorts where they have been faithfully and carefully trained who have carried among the laity the gospel of fresh air and hope, who have showed how much could be accomplished even in their own homes and that even in our smoky cities outdoor life was possible and desirable, that night air is harmless, that open windows do not give pneumonia, and that hygiene and common sense can save many who could not get the purer and more vitalizing air of our resorts.

A great difficulty that meets us in the study of the subject comes from the fact that our opinions have been built on the clinical experience of the men working in this line and therefore are necessarily only the summation of innumerable personal impressions. Meteorology and climatology, much as they can help us, are not as yet, however, able to account entirely for the wonderful results which clinical experience has noted, just as the most skillful analysis of the waters of a mineral spring and the synthetic construction therefrom of an apparently identical mixture fails to produce the results gotten by Nature's mixture.,

Necessarily experience and results must be relied on to give the final word, and while that experience and those results are such as to allow the honest worker who has had them, no doubt as to the power of climate, yet he must realize that the profession may doubt his impartiality.

Both in hopeless and in hopeful cases, however, the clinical evidence is too conclusive to admit doubt of the power of these more or less unclassifiable influences. In advanced cases the great amelioration or cessation of many of the most painful symptoms and the general improvement of the patient's comfort and strength, combined with the marked effect on mixed infections, cannot be doubted. They far surpass the very best results obtainable in similar advanced cases in our cities on porches or roof gardens, and the rapid relapses which in such advanced cases follow their return to ordinary climates are only another testimony in the same direction. Often, indeed, cases which on arrival appear to be utterly hopeless, patients who are brought on stretchers in the most desperate condition and whose course in their homes had been steadily downward, will, against one's best anticipations, rally and regain a very fair state of health, which often can be continued for years provided they do not return to less favorable regions, and which, it has only too often been proved, is dependent on such a residence, for when tempted by an apparent complete arrest, they return home, the cured mixed infection soon lights up again and the rapid return of their trouble shows

what the climate has been doing for them all the time.

In cases of slight or medium severity the percentage of arrest of trouble, as attested by many of our profession in their own persons and noted in many patients, is fully as satisfactory as are the results of any of the therapeutic measures, whether physical or pharmaceutical, recognized as powerful in other diseases, and no more open to reasonable doubt.

When we come to study the influences at work in the matter, let it be stated clearly that a specific influence of climate in tuberculosis such as that of mercury in syphilis or of quinine in malaria is no longer admitted, although the therapeutic influence of climate in this disease cannot be doubted and is as certain as are the effects of any of our standard drugs or other measures.

Realizing, then, as we now do, that the very first aim in the treatment of tuberculosis is and must always remain the raising of the vitality of the patient's system until it is able itself to conquer its disease, we see that the beneficial effect of climate depends upon its wonderful power in vitalizing the system, on its beneficial effects on metabolism, on its awakening of dormant or waning natural powers. It is to this that we must look to explain its chief effects, and if it could be doubted for a moment that climate has such powers, then it might well indeed be questioned if there were any value in it. But that these are exactly the effects which it has, has been too satisfactorily proven by much careful scientific work to be questioned, and anyone who has made a visit to any of our resorts, whether low or high, cannot have failed to note such effects in his own person. Its stimulating effect on all the vital processes, the deepening of respiration with the consequent improvement of gas interchange, the awakening of appetite, such as can be gotten by no drug, the improvement of the mental attitude, all these are plainly in evidence. If this be so, and if it be also true that the whole aim of the hygienic and dietetic treatment is to produce such results, then nowhere can this treatment be expected to be so effectual as where it is aided by climate.

No advanced workers in this line would today, as was formerly done, place climate first in the order of therapeutic measures. Let it never be forgotten that hygiene, diet, teaching and supervision must *always* come first, but granted that they are properly attended to, then enters the powerful rôle of climate, reinforcing and accentuating the effects of these other measures, and yielding results that cannot be approached even with the same care and watching and food in less favorable localities.

Climate has been defined by Parke Weber as "a combination of various conditions of the atmosphere and earth's surface determining the suitability of a region or a site for the life and health of animals and plants," and climatotherapy as "the utilization of climate to promote the comfort and recovery of the sick or to prevent the development of disease."

W. L. Dunn has also said that "a climatic resort is a place where there is a maximum of sunshine, a minimum of fog and mist, relatively few hours of rainfall, a relatively low humidity, great purity of the atmosphere and an opportunity for efficient medical supervision." Altitude is not referred to here, despite its great value, as not being a factor in all climates beneficial in tuberculosis.

To discuss here the various forms of climate is not within our province, but it should rather be our effort to point out what in general are the elements which in climate have a beneficial influence. These can be classified in the order of their importance as: (1) Abundance and bacteriological and chemical purity of the air; (2) sunshine; (3) coolness, or, in a certain number of cases, warmth; (4) dryness, or in a few cases, a moderate degree of humidity; (5) altitude; (6) wind; (7) equability; (8) soil.

The bacterial and chemical condition of the air has been carefully studied and has been found to vary from a very high pollution in the streets of our large cities to an almost absolute purity in high mountains, open seas, deserts and arctic regions. A very slight degree of pollution is found in country and mountain climates, especially when sparsely settled.

Recalling the powerful rôle of streptococcal and other mixed infections in pulmonary tuberculosis and their power of changing a simple tuberculosis with chronic advance into a destructive consumption, noting also the bad effects of dusty atmospheres in producing bronchial catarrh, and especially the rapid lessening of mixed infections and such catarrhs in the purer air of our climatic resorts, the importance of this factor does not need to be further dwelt on. We would only note here that we believe that the relapses of some cases when they return to city life are due to the reinfection of the diseased lung by pus organisms and to its irritation by dust.

After pure air we would place sunshine and sunheat, whose effects are both direct and indirect. Although its direct effects are evidently beneficial, they have never been completely analyzed and therefore will not be dwelt on here. The indirect effects of sunshine as seen in its powerful stimulation of the patients' spirits are of great importance.

Dryness in most cases is a most important factor through its valuable anti-catarrhal effects, but when extreme this influence may be reversed, and there are not a few cases in which a moderate degree of humidity is more beneficial.

Generally, low relative humidity with moderately low temperatures has a tonic effect and is beneficial in irritated conditions of the respiratory mucous membrane, while such low humidity with very low temperatures, while stimulating, is apt to irritate the mucous membranes. Low relative humidity with high temperature is

generally debilitating. High relative humidity and moderate temperature is soothing to the irritated mucous membranes, but high humidity combined with low temperature favors catarrh. On the whole in pulmonary tuberculosis low relative humidity with moderately low, or low, temperatures is most generally suitable, and the average tuberculous patient always makes his best gains in cold, dry weather, where such conditions prevail. There are certain cases, however, which do better with a high relative humidity and warm temperature.

Equability where older people or the very feeble are concerned can be of great value, but is not as important as used to be supposed. In stronger patients variations in temperature stimulate the vital activities, hence, generally speaking, equability is not an important factor.

Wind, when the patient is directly subjected to it, is harmful, but when he is properly protected its purifying influence on the air, provided vegetation is sufficient to prevent dust storms, is beneficial.

Most authorities are agreed that, other things being equal, some degree of altitude owing to the great purity of the air and to its stimulating effect on the metabolism and appetite, etc., is most desirable, but it is not here our function to discuss the large question that this opens up. Enough to say that care should be used to choose an altitude suited to the patient's degree of vitality and heart power.

But a study of these local conditions and their adaptability to any given case is not enough. The temperament of the patient should be studied, as well as his docility and intelligence, for these play an important part in getting the best results from a climatic cure. In a few, homesickness can be so severe and unyielding as to make a departure from home impossible. Others are so intractable and so unwilling to obey any instructions that they are apt to injure themselves by imprudences.

Above all, the financial condition of the patient is a determining factor, for, as one of your committee has elsewhere written, "If, however, one has to choose between treating patients in narrow circumstances in their own homes or sending them to a resort where their poverty will not enable them to get the necessary conditions of quarters, diet and care, which are so essential, by all means let them stay at home. By changing their houses, by moving to the top floor, using the roof as an outdoor sun parlor, and spending the utmost possible part of their time there, by economizing in every other way in order to be able to spend more freely for good food and cookery, much can be done, provided always that their lives can be properly supervised. When pecuniary reasons prevent the patient from seeking a special climate, excellent results can thus be had, though with greater difficulty, in the patient's home, if the case is not too advanced and that home not too miserable."

For the submerged tenth climato-therapy, save as supplied by the municipality or State, or by philanthropic effort, is an impossibility, and even the getting of proper conditions in their own home is for them a Utopian idea. That municipal or State sanatoria have been opened for this class near our cities, but in localities whose purer air and favorable conditions mark them as climatic resorts, gives hope in this direction, but the only permanent results among the poor will come from a prophylaxis based on teaching them decent modes of life, on improvement of bad sanitary conditions and on a change in the impossible hygiene of their lives. For those in modest or narrow circumstances climato-therapy is only desirable when they will be able to get at the resort equal or better conditions than they could have at home. For those who are comfortably off, or for the well-to-do, it seems to your Committee that there cannot be a moment's doubt that any results that they could obtain at home by the most careful treatment, even if their home doctors are absolutely familiar with the kind of detailed and personal work which these cases require, can be infinitely improved and the percentage of cures or of arrested cases greatly increased by the carrying out of similar treatment under the favorable influences of climate.

We would here also say that with rare exceptions the patient who leaves the resort, however well he may be and however great the improvement in his physical findings, should not be told that he is cured, but only that the process is arrested, and that if, when he returns home, he, by faithful living, can show for two years a continuance of such conditions, then he may justifiably consider himself cured.

A misunderstanding of this fact is largely responsible for the popular condemnation of climatic cure. A climatic resort should be looked upon as a university where the patient goes to get under proper conditions that discipline and instruction which he will bring back with him into his daily life at home, where he should serve as a teacher of those with whom he is thrown, and the doctor in a climatic resort will be of use to his patient in proportion as he is able to be a forceful and stimulating teacher.

A CASE OF SPINAL APOPLEXY WITH FINDINGS.

BY WILLIAM BROWNING, M.D.,
AND
FREDERICK TILNEY, M.D.,
OF BROOKLYN, N. Y.

MR. C., sixty years old, seen first July 12, 1904, with Dr. E. Frei. The patient is a vigorous man, looking younger than his years. Weight 165 pounds. Not a user of alcohol. Moderate smoker. Born in Germany. Last year for four months he had a kind of lumbago and pain in the right side on stooping over, for which he consulted a physician. It did not yield well to treatment, but finally went away entirely.

Last February or March he also had a "touch of lumbago or sciatica that did not amount to much." Has a healthy family (wife and four children).

On July 8 (*i.e.*, four days before I saw him) he had a hammer in his hand for some nailing at the rear of the house. He fell down two stone steps. He does not know how it occurred, but thinks some paralytic thing happened to him and that hence he fell. When asked if he had not slipped and in falling brought on the condition, he was inclined to agree with the suggestion as perhaps the more probable. At any rate the right leg went forward, the left hung back on the step, coming under him, and the spine was twisted. He immediately experienced a numb or sleepy feeling in his lower extremities. "I got up from the floor myself, . . braced myself against the wall and called for help." However, he could not walk, was unable to take another step, and had to be carried in.

The doctor saw him in an hour. He still could voluntarily move the lower extremities, the right the better. It seemed as though his movements were then limited by pain. Has had to be catheterized since the occurrence. There has been no fever. Urine normal.

He complains now greatly of pain in both sides (Weichen), and on turning there is also some on the inside of left knee. But the pain is now much less. Catheterization or evacuation he hardly feels at all, though knows when gas passes.

Examination showed sensation partly preserved over the whole of both lower extremities. He recognizes an impairment, however (all forms, particularly touch), up to about half-way between pubes and umbilicus and correspondingly around to the back. A place on the inner side of left knee is very tender to pressure, although normal in appearance. Tapping either sole upward causes pain. Some tenderness over the lumbosacral region. Pain also on deep pressure in front toward the promontory. On touching either sole, "it feels like a thousand pins and needles." Temperature (rectal) 98.1° F. Pulse 86 and good. Pupils normal. No cardiac murmur.

No knee-jerk on the left, and none even on reenforcement on the right; but on tapping the right patella downward there seemed to be a little reaction in the muscles above. No ankle clonus on either side. No plantar nor Babinski, except that occasionally on the left there is a slight normal plantar movement of the big toe. No distinct abdominal nor epigastric reflex. Slight cremaster on the right; none on left.

No voluntary motion in either lower extremity. The least movement or jar is painful, and turning in bed is impossible without much aid and intense suffering.

July 16.—Sharp pain down the insides of both thighs, though none along the sciatics. This let up in about a quarter of an hour, and was followed by a fifteen-minute chill. Temperature 100° F. The chill thought to have been urethral. Evacuation of bowels is now involuntary.

To gross tests he was anesthetic to the groins, although feeling heavy prods in the thighs. Sensation normal above the umbilical girdle, but varyingly imperfect from there to the groins. Claims to be slightly conscious of urination.

Spinal puncture between second and third lumbars, gave scant three drams of perfectly clear, colorless fluid. This, however, soon showed a coagulum. It was examined by Dr. Stäbler, who reported as follows: "1. Reaction, faintly alkaline; 2. Mucin, none; 3. Globulin, present, about normal (1 to 1,000); 4. Nucleoproteid, none; 5. Proteoses, both primary and secondary, in larger amount than globulin; 6. Serum albumin, two to three times the amount of globulin; 7. Peptones, none; 8. Phosphates, none; 9. Chlorides, present; 10. Cholesterin, none; 11. Fibrinogen, none."

"The sediment, or rather, gelatinous matter in the bottom I do not understand. It is not fibrin—not cellular in structure; microscopically and physically like mucin, chemically . . . the quantity was too small to do anything with." Stained for diplococcus, but nothing found.

According to Dr. Bartley, whose opinion I asked, the findings in this fluid indicated either adjacent hemorrhage or inflammation, consequently indecisive on the main point in question.

July 20, at hospital. No plantar reflex, ankle clonus or knee-jerk on either side. Cremaster now present on each side, stronger on the right. Can locate coarse touch on either sole and on front of either leg. No action of either psoas muscle, and still complete motor paralysis of both lower extremities. The great pain on even passive motion of either lower extremity persists. The least turning of the trunk caused intense pain, which he located in a general way at the groins. Bladder and rectum still acting involuntarily.

Urine—Sp. gr. 1.029—amber alkaline; large trace of albumin, erythrocytes; few epithelial cells; crystals of leucin, tyrosin, sodium and ammonium urates; phosphates.

Owing to his suffering his family finally decided on an operation; and the symptoms, according to general views, gave hope that perhaps the pressure of some hemorrhagic process about the meninges might be relieved thereby.

Operation.—Laminectomy was performed by Dr. Warbasse at the German Hospital, on July 20, twelve days after the onset; and it is to him that I am indebted for the following details:

Incision in median line over spinous processes of eighth, ninth, and tenth dorsal vertebræ. Laminae of eighth and ninth divided and together with the spinous processes lifted out. No hemorrhage or cause of irritation discovered. Upon pressing aside the cord with its membranes by means of a spatula a slight oozing of bloody serum came up from below. The laminæ of the

tenth and eleventh dorsal vertebræ were then divided and removed. Again a small amount of thin blood or bloody serum oozed out from in front of the cord-membranes when pressed aside. There was no clot present nor evidence of old hemorrhage. The total amount of effusion (wholly or largely blood) was estimated by Dr. Warbasse at two drams or more. It had been in front of the cord, outside the dura. This latter appeared normal. There was no bulging of the membranes or evidence of increased subdural pressure. The membranes of the cord were not opened.

"Muscle sewed together over opening in spinal canal with chromic-gut sutures. Small iodoform gauze drain. Layer suture. Skin closed with subcuticular suture of linen."

FROM CHART AT THE HOSPITAL.

		Pulse.	Respiration	Temperature
July 19, 1904....	9.15 A.M.	104	20	99.8
	12 noon	92	24	99.6
	4 P.M.	100	24	100.0
	8 P.M.	96	24	99.8
July 20.....	8 A.M.	104	22	99.4
	12 noon	104	24	....
	OPERATION.			
	P.M.	...	40	....
	8 P.M.	160	28	103.4
	12 M.	156	32	104.0
July 21.....	4 A.M.	164	48	104.8

When returned to the ward his wrist pulse was scarcely perceptible, but he responded to stimulants. At 8 P.M. pulse 160 but improving, and he was free from pain. At midnight his mind was clear, he looked better, and expressed himself as gratified at being free from pain. He failed rapidly toward morning, and died at 7 A.M.

A portion of the dorsolumbar cord was secured; but no abnormal appearances could be discovered at its removal. The histological examination and report are by Dr. Tilney.

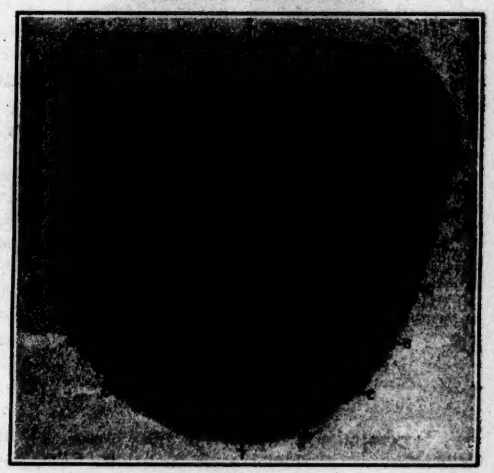
Putting it all together, it appears that there were changes outside the dura (hemorrhagic extravasation [1]), also in the cerebrospinal fluid (as shown by spinal puncture), and evidence of both primary and secondary alterations in the adjacent cord. The change in the fluid [2] can be considered as secondary, and whatever the character of the epidural blood or effusion found at the operation, it can hardly have been sufficient to cause the symptoms. Though we may look to the cord as the main seat of the trouble, the whole process must be termed a hemorrhagic meningomyelitis. The lack of fever in the early days speaks for traumatism as a cause.

Pathological Report.—Portion of adult spinal cord with enclosing membranes intact. Length 9 cm. Configuration of cephalic end indicating level of eleventh dorsal segment, that of caudal, third lumbar segment, *i.e.*, dorsal segment XI to lumbar segment III inclusive.

The Membranes.—Dura mater somewhat thickened; epidural plexus much enlarged; ligamentum denticulatum absent on both sides; shreds of its remains could be floated out from pia. Pia mater somewhat thickened; Easily separating from cord; macroscopically shows a diffuse interlamellar hemorrhage (Stain v. Gieson).

The Cord.—Macroscopically, cross segmentation near the upper levels of the twelfth dorsal segment showed a small, darkly pigmented area in each anterior horn slightly forward of the center. Segmentation through the first, second, and third lumbar segments showed an area of like pigmentation, but of greater extension, occupying relatively the same topographical position as the area noted in the twelfth dorsal segment. In addition, a smaller, well defined area of pigmentation in the base of either posterior horn, on the mesial side (about Clarke's column). Also a few punctiform areas of dark pigmentation scattered in the posterior horns. Microscopically, the white substance shows irregular areas of marked disintegration in the dorsal columns on either side, but not symmetrical, involving mostly the dorsolateral divisions of Goll and Burdach, and the fasciculus of the posterior septum. Other circumscribed areas of disinte-

TRANSVERSE SECTION OF SPINAL CORD AT LEVEL OF THIRD LUMBAR SEGMENT.



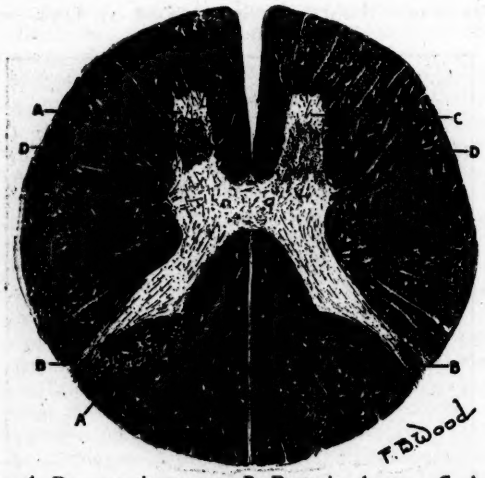
A. Anterior horn. *B.* Posterior horn. *C. C. C. C.* Degeneration area. *D.* Central canal. *E.* Anterior long fissure. *F.* Posterior median septum. *G.* Hemorrhagic infiltration.

1 Though epidural hemorrhage in such a case is at least unusual, it can hardly be attributed to the spinal puncture. The change in the subarachnoidal fluid proves previous meningeal involvement, and is also unusual. And the puncture was too far below, especially as no outside hemorrhage was found there when the portion of cord was removed a few hours later.

2 In Schiff's case (*V*, Case 18, of Table, p. 692, MEDICAL NEWS, of Oct. 7, 1905) "Lumbar puncture five hours ante mortem brought about 20 c.c. of clear fluid under a very considerable pressure. It showed the characteristics of a non-inflammatory cerebrospinal fluid (no coagulum). Micro-organisms were not demonstrable either microscopically or culturally."

gration are found on both sides in the crossed pyramidal tract, the direct cerebellar tract and Gower's tract. Disintegration of lesser degree is found in the tracts already mentioned also in the fasciculus sulci marginalis anterioris (of Marie) and the intermediary bundle (of Löwenthal). On higher magnification many of the axis cylinders in these areas as well as their myelin sheaths, appear to be much swollen. Still others have altogether disappeared, leaving in their place spacious lacunæ. The vessels in the white substance, though extremely injected, present no change other than a widening of their perivascular lymph spaces, in some of which latter are found a few red blood cells. In the lower lumbar sections, external to the posterior horn, appears a well-defined hemorrhagic area. These observations are true of the last levels of the second lumbar and all the levels of the third lumbar segment. A marked change occurs in

TRANSVERSE SECTION OF CORD AT LEVEL OF TWELFTH DORSAL SEGMENT.

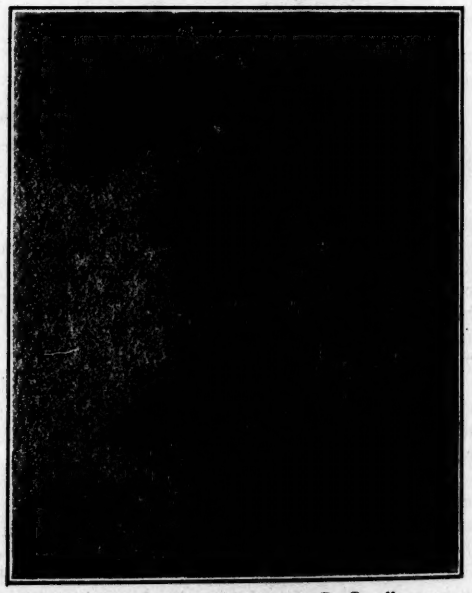


A. Degeneration area. *B*. Posterior horns. *C*. Anterior horns. *D*. Hemorrhagic infiltration. (Preparation according to Pal, combined with eosin.)

the disposition of the disintegrated areas in the eleventh and twelfth dorsal segments. Here the advanced disintegration is confined to a more limited space and appears in the dorsal column of one side only. It is a narrow zone lying in the column of Burdach, extending from the neck of the posterior horn to the periphery and separated from the horn by a narrow zone of comparatively intact axons. Other diffuse areas of disintegration are found in several other positions. The gray substance, at the lower lumbar levels, presents in either anterior horn an extensive area of citron pigmentation (Schmaus) which, upon higher magnification, is seen to contain a number of red blood cells. This area embraces all the anterior horn cell groups. In the dorsal segments it is less extensive. The same condition is present in and about Clarke's column. Small hemorrhagic collections are seen scattered throughout the posterior horn, more especially in the prerolandic area. Some cells in the antero- and posterolateral groups of the anterior horns, also in Clarke's column, present the following changes: (1) Central chromatolysis; (2) swollen and eccentric nuclei, and (3) large deposit of a yellow pigment occupying one of the polar extremities. Other cells in these regions show the yellow pigmentation without the chromatolytic change.

These departures from the normal cellular morphology should not be accepted as pathological until the improbability of post-mortem artefact has been reasonably established. The fact that the highly resistant cells of the anterior horn and Clarke's column should show such marked change while the less resistant cells of the commissure of the para- and prerolandic areas present little deviation from the normal, may be taken as at least presumptive evidence of a pathological condition in the cells of higher resistance. Upon the chronology of the lesion

MOTOR CELLS FROM ANTERIOR HORN.



A. Intracellular yellow pigment. *B*. Swollen eccentric nucleus. *C*. Central chromotolysis. (Preparation according to Nissl.)

the central chromatolysis has a distinct bearing. For, accepting van Gehuchten's contention, that a peripheral chromatolysis indicates a slow degeneration, whereas a central chromatolysis points to a sudden and virile assault upon the cell, the case in question illustrates the latter type in which the assault has been sudden, the destruction comparatively rapid. The yellow pigment undoubtedly is part of the degenerative process going on in the cells.

The vessels in the gray matter are intensely injected, in places appearing as aneurismoid dilations. The canal at all levels is obliterated, its site being occupied by a dense mass of filamentous neuroglia. In some places, especially the areas of degeneration, the filamentous neuroglia has assumed the embryonal type; the cells have become migratory, are somewhat swollen and show a decided reactionary increase in number. Taking into consideration, therefore, the circumscribed and longitudinal extent of the infiltrated gray area, the free corpuscular elements in the same, together with the specified degenerated condition of the root and tract cells, there is justification for the term Hematomyelitis Tubularis (Levier). To this latter condition, the pial hemorrhage is incidental. Although the picture *in toto* corresponds in most points to a true myelitis, it must be borne in mind that the essential causes producing all the changes in myelitis and the secondary changes of post-traumatic hematomyelitis are identical, *i.e.*, profound disturbances of nutrition.

The points of diagnostic value in the case are: (1) The central hemorrhagic areas; (2) Circumscribed and diffuse disintegration of the white substance characterized by much swollen axons with swollen sheaths, also by large lacunæ caused by the total disappearance of many axons with their sheaths (Lückenfeld of the German authors); (3) Chromatolysis and degeneration of many cells; (4) Injected and dilated condition of the blood vessels; (5) Increase of neuroglia in size and number.

All of these changes, except the first mentioned, namely, the presence of the hemorrhagic areas, would appear in a true myelitis (exclusive of the very rare form, myelitis hemorrhagica acutissimus), but the presence of the central hemorrhage determines the diagnosis of hemorrhagic myelitis. The history is of pathological moment only in so far that statistics of Oppenheim, confirmed by Minor and others, attribute 90 per cent. of hemorrhage into the substance of the cord, directly to trauma.

THROMBOSIS OF THE RECEPTACULUM CHYLI AND CHYLOUS ASCITES AS A COMPLICATION OF CIRRHOSIS OF THE LIVER.

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THE literature of chylous ascites contains the record of a number of rare and curious pathological conditions; and in this respect the following case is no exception, as it was due to thrombosis of the receptaculum chyli which apparently occurred in the course of an attempt at collateral circulation in cirrhosis of the liver. Several cases have been reported in which the thoracic duct was occluded by a thrombus formed near or at its junction with the subclavian and jugular veins, but no record has been found of a thrombus situated lower down in the chyliferous system, nor any reference to a causal relation between cirrhosis of the liver and chylous ascites.

Clinical History.—J. D. L., white, male, age at death, seventy-four years. Concerning the patient's family history and early personal history no facts of importance could be learned from the patient or relatives. The patient had been a clerk in one of the Departments, was married and had children. He used whisky freely until about twenty years before admission, when, on account of some domestic trouble, he took to drinking quite heavily and kept it up until admission. He was admitted in 1895, with the diagnosis of dementia following an attack of grip. At that time it was noted that his pulse was weak and rapid, and that his abdomen was protuberant. He lived for several years on one of the chronic wards, a good-natured dement, apparently in good health, although it was the general impression among the attendants that his abdomen was rather large.

The notes show that in the fall of 1901 the patient was admitted to the hospital ward with vague pains, feebleness and inability to walk, which, however, soon passed off, and in a few weeks he was returned to the dormitory. In January, 1903, the patient was again in the hospital ward for a few weeks, with diarrhea and pains in the abdomen. In November, 1903, he was readmitted to the hospital ward, with distention of the abdomen, swelling of the legs and pain in the abdomen. There was no fever; the urinalysis was negative. The patient was put on tincture of digitalis, improved rapidly, and in about four weeks was apparently as well as ever.

On March 18, 1905, the patient came under the writer's observation on admission to the hospital ward, in the service of Dr. H. R. Hummer, with an attack of distention of the abdomen, swelling of the legs and generalized pains in the lower part of the body. Examination showed an elderly man with a peaked face, a rather vacant expression and a greatly distended and tympanitic abdomen. He weighed about as much as usual—168 pounds; his height was 5 feet 3½ inches. A network of enlarged veins, in which the blood flowed from below upward, covered the abdomen and lower chest, except for a clear space about the umbilicus. Posteriorly at their bases the lungs gave impaired resonance, diminished breath-sounds, and a few liquid râles. The heart was slightly enlarged to the left, and a blowing systolic murmur was heard at the apex and transmitted to the axilla; the second pulmonic sound was accentuated. The blood-pressure was 165; the radials were tortuous and thickened. Hemoglobin was 65 per cent.; red corpuscles, 4,350,000; white corpuscles, 8,800 per mm. The liver-dulness in the nipple line extended from the fourth to the seventh ribs. Some dulness was present in the flanks. Twenty-six ounces of urine were passed in twenty-four hours, with a specific gravity of 1.025, a trace of albumin, but no casts. The legs were tense and edematous, and the scrotum was puffed up after

reduction of a right complete inguinal hernia. Well-marked external hemorrhoids were present; the stools were large and well-formed, of a putty color and contained no ova or blood.

Linear incisions were made in the legs, and the patient was put on infusion of digitalis and saline purgatives, but this treatment gave no relief. The legs became more tense, the abdomen more distended, with marked dulness in the flanks, fluctuation and dyspnea. On March 28 the patient was tapped in the median line, and 5,700 c.c. of fluid were withdrawn. A large quantity was also drained off through the puncture during the next day or two. The abdomen became lax, the edema disappeared, and the patient felt much easier. By April 6 the fluid had reaccumulated, with the same symptoms, and 6,200 c.c. were removed; no leakage occurred. On April 16, 7,800 c.c. were obtained. The total amount of fluid, including 2,800 c.c. obtained at the autopsy, was 22½ liters.

Each time the fluid presented the same striking appearance. It was milky white, with a tinge of pink, which became more pronounced on each tapping. On standing, the pink color disappeared, and a film of red appeared at the bottom of the receptacle. The specific gravity of the first specimen was 1.010, of the second 1.012, of the third 1.013. A qualitative analysis of each specimen gave the same results; a quantitative analysis of the last specimen was as follows:

Specific gravity	1.013
Reaction	Slightly alkaline
Sugar (fermentation method)	0.1 per cent.
Fat (ether extract)	1.3 per cent.
Albumin (albuminometer)	1.0 per cent.
Urea	0.1 per cent.

Microscopical examination showed no large fat-globules, but a great number of fine granules in constant motion; the cellular elements were as follows:

Erythrocytes	24,000 per mm.
Leucocytes	1,800 per mm.
Small lymphocytes	66.5 per cent.
Large lymphocytes and transitional cells	13.5 per cent.
Polymorphonuclear leucocytes	20.0 per cent.

A differential count of the leucocytes of the blood at this time showed:

Polymorphonuclears	76.5 per cent.
Small mononuclears	11.0 per cent.
Large mononuclears and transitionals	10.5 per cent.
Eosinophiles	1.5 per cent.
Basophiles	0.5 per cent.

The fluid did not become clear on extracting with ether, no superficial layer developed on standing, and no decomposition occurred for several days, although eventually this took place and a slight coagulation appeared, unless a preservative was added. No distinctive odor could be detected.

Several observations on the blood-pressure were made with Cook's modification of the Riva-Rocci apparatus and a 10 cm. cuff.

TAPPINGS.	BEFORE TAPPING.		AFTER TAPPING.		AFTER BINDER.		AFTER TWENTY-FOUR HOURS.	
	B. P.	P.	B. P.	P.	B. P.	P.	B. P.	P.
First. March 28. .	165	88	140	92	150	100	130	102
Second. April 6	135	72	125	76	130	76	.	. .
Third. April 18. . .	115	62	1 0	88	145	86	110	72

These readings, except in the last instance, showed the usual fall in blood-pressure and rise in pulse-rate when the intra-abdominal pressure was relieved by tapping. A corresponding rise occurred when the abdominal pressure was partially restored by the use of a binder. The secondary fall was probably due partly to a restoration of normal conditions and partly to a progressive failure of the circulatory apparatus. The pressure was 105 a few hours before death.

The temperature at first oscillated irregularly about the normal line, ranging from 97° to 99° F., and then became continuously subnormal, 96° to 98° F. No rise followed an injection of three milligrams of tuberculin. The patient lost about twenty pounds during the five weeks of illness. During the last two weeks it was noticed more distinctly that the patient while lying quietly in bed would cry out as if in great pain, and examination showed that at these times the left thigh became spastic, and that, when relaxed, it was an inch smaller in circumference than the right. No patellar reflex could be elicited on either side, but the light reflex was present in both eyes.

The incisions in the legs had become slightly gangrenous, and in the last few days the patient became comatose, developed a rapid and weak pulse, numerous liquid râles and rapid respiration, and died on April 26.

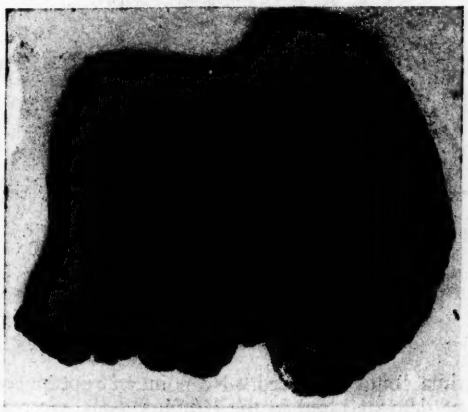
The mental condition apparently had no bearing on the aspect of the case in question. The patient was for the most part a tidy, humorous old gentleman, unmindful of time, forgetful of recent events, and anxious to get back to his family and the Department. At times he was querulous, and vowed he would reveal the rotten state of things at the hospital.

The analysis of the fluid clearly established the case as one of chylous ascites; but no definite diagnosis of the cause was made. Cancer and tuberculosis of the abdomen, heart disease and cirrhosis of the liver were considered among the probabilities. The diagnosis of cancer was favored by the presence of blood in the fluid, but was negatived by the absence of cachexia and of localizing symptoms. Tuberculosis seemed to be excluded by the failure of the tuberculin test. Heart disease, while present, seemed hardly sufficient to account for the large amount of fluid. Cirrhosis of the liver seemed probable, on account

of the history and symptoms; but no reason was apparent for the presence of chyle in the ascitic fluid. The high percentage of lymphocytes in the fluid might have suggested that the lesion was connected with the thoracic duct rather than with the lacteals; but this was not thought of until after the autopsy.

Post-Mortem Examination.—With some difficulty permission was obtained to examine the body, and twenty hours after death the patient came to autopsy in the service of Dr. I. W. Blackburn. A considerable quantity of stomach contents had during this time discharged through the mouth. The abdomen was still considerably distended. By tapping and, after incision, by sponging, about 2,800 c.c. of the same reddish-white colored fluid was collected. On opening the abdomen the first object met was a typical hob-nail liver (Fig. 1). This organ weighed

Fig. 1.

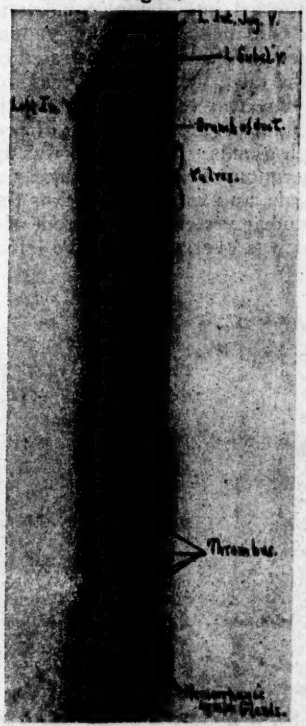


Atrophic cirrhosis of the liver. Superior surface.

1,400 grams. The right lobe was more contracted and distorted than the left. The surface was very irregular and studded with innumerable large and small nodules. On section, bands of connective-tissue could easily be seen surrounding the remains of pale liver tissue. Under the microscope the usual picture of atrophic cirrhosis was presented. There were islands of fatty liver tissue surrounded by dense bands of connective tissue containing many so-called newly formed bile ducts. In some cases the margins of the lobules were included in the connective-tissue bands. The presence of at least a part of the ascitic fluid was therefore explained.

Before looking for the cause of the presence of chyle several organs were removed. The heart, weighing 460 grams, showed thickening and insufficiency of the mitral valves. The lungs were edematous and partly collapsed at their bases and posteriorly; the right lung weighed 850 grams, and the left lung 660. The capsule of the spleen was thick and nodular; the substance, fibrous; the weight, 350 grams. The stomach was simply distended and dilated, and was ligatured and removed. The small intestines likewise threw no light on the problem, and they were removed in toto with the mesentery. There were a few adhesions between several of the loops, and a few irregular opaque patches in the peritoneum; elsewhere the peritoneum was slightly thickened. The lacteals were visible, but not noticeably enlarged. The veins, except those to be mentioned later, were not markedly dilated or engorged. The mesenteric fat was marked. The lymph glands, except those to be mentioned later, were

Fig. 2.



Thrombosis of the receptaculum chyli and its tributary lymph vessels; all but two of the lymph glands have been removed.

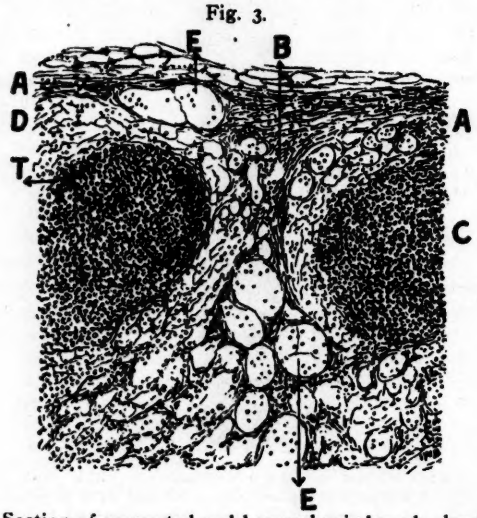
light brown and not enlarged; microscopically they showed no pathological change. The colon was also removed to clear the field. No varices were found in the entire canal.

A promising-looking mass was now more clearly seen lying on the top and left side of the bodies of the lumbar vertebræ, and extending from the brim of the pelvis to about a level of the pancreas. This proved to be a large fatty capsule of a displaced left kidney. The fat was firm and fibrous and weighed 810 grams. The kidney, which lay in the center, weighed 120 grams. The right kidney lay in the usual position, and was also surrounded by a large fatty

capsule weighing 310 grams; the kidney weighed 110 grams. Both kidneys showed a few cysts and some adhesion of the fibrous capsule.

As presence of this mass seemed to be only a coincidence, it was removed and the search continued. The aorta was removed and the receptaculum chyli and thoracic duct were found in their usual positions, and with some difficulty were traced from beginning to end (Fig. 2). The receptaculum chyli was formed by two large lymph vessels entering from below, one at each corner. Lying in the body they looked very much like veins, as they were thin and of a dark color. On opening they were found to be completely occluded by a firm fibrous clot which extended upward into the receptaculum and duct for about six inches, growing gradualy smaller. The valves were easily demonstrated in the upper part of the duct, but no blood was found in this region. The two vessels which emptied into the receptaculum began in a group of peculiar-looking lymph glands. This group was apparently a conglomeration of about ten lumbar and mesenteric glands, and was situated over the third and fourth lumbar vertebræ at the root of the mesentery, and was overlapped on the left side by the

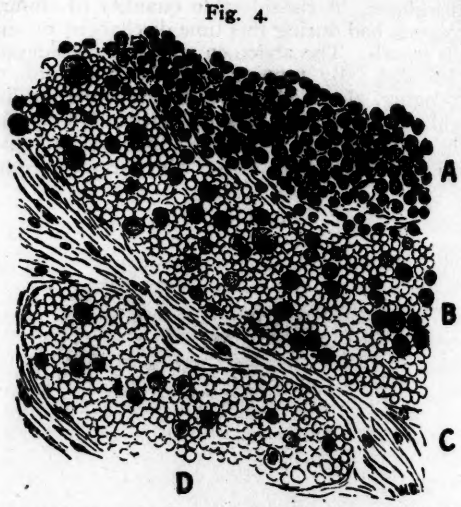
Fig. 3.



Section of congested and hemorrhagic lymph gland under low power: *A.* Capsule; *B.* Trabecula; *C.* Lymph follicle; *D.* Dilated lymph sinus containing blood-cells; *E.* Dilated blood vessels containing blood-cells, the red cells are invisible with this power; *T.* Blood pigment, x50.

fatty capsule of the kidney. The glands were plump, dark blue, and showed openings of dilated veins. On section a bright red center appeared. Several principal lacteals or lymph vessels led from these glands and united to form the two chief tributary vessels of the receptaculum. These lymph vessels were well defined, firm, and on incision showed the beginning of the thrombus. Small strands of clot could be easily seen running from fine openings in the hila into the lymph vessels. Under the microscope the lymph glands showed a great dilatation of the blood vessels of the capsule and trabeculæ (Fig. 3); and the lymph sinuses were also dilated and entirely filled with escaped blood-cells (Fig. 4). Blood-cells could also be seen in the follicles, together with a considerable amount of pigment, which gave the iron reaction of the blod-pigment. A section of the thrombus showed partial organization; in a few fields remains of the intima could be traced. No point of rupture could be demonstrated in the lymph vessels, receptaculum or thoracic duct.

Fig. 4.



Part of section of Fig. 3 under high power: *A.* Lymph follicle; *B.* Lymph sinus containing red and white blood-cells; *C.* Trabecula; *D.* Dilated blood-vessels, x250.

Discussion.—The autopsy findings of a cirrhotic liver and a thrombus of the receptaculum were sufficient to account for the case; but it remained something of a puzzle until examination of the lymph glands demonstrated a connection between these two conditions. The case then became clear as a rare complication of portal congestion. The obstructed blood-current found an outlet by collateral circulation, not only through the superficial and hemorrhoidal veins, but also from the veins of the mesenteric and lumbar lymph glands, either by diapedesis or rupture, into the lymph-sinuses, lymph vessels and receptaculum chyli. In this route, however, a thrombus formed, which not only put an end to the circulation, but also obstructed the flow of chyle. The chyle then, either by transudation or rupture, passed into the abdominal cavity with a certain amount of the blood. This view of the case is sanctioned by Dr. Blackburn; and Prof. William H. Welch, to whom the case was stated, kindly gave his opinion that this is the most natural explanation. He also called attention to the fact that lymph, and hence chyle, contains

fibrinogen, which will form a clot as soon as the fibrin-ferment is furnished by the blood. The fibrin-ferment, according to most physiologists, is given off by white corpuscles. These were present in the fluid in considerable numbers, and in their passage from the blood-vessels to the lymph vessels were probably so altered that they started the process of clotting.

The appearance of the lymph glands suggested the possibility that they were hemolymph glands; but nothing in their distribution or structure tended to establish such an opinion.

While so much of the case may be considered as fairly well settled, several uncertainties remain. For instance, what part did the displaced left kidney play in the production of the thrombus? Although it was apparently simply a coincidence, it partly overlapped the glands and receptaculum, and may have been a factor by

was found to have an obstruction of unknown nature in the lymph vessels and lymph glands. Busey in 1889 made the first collection of cases of milky ascites, and found 53 cases, 28 of which were chylous; 39 had been reported in that century, and 27 in the last two decades. Bargebuhr in 1893 collected 75 cases, 48 of which were chylous, and in 1895 added nine more cases. Rotmann in 1897 collected 18 more cases and added two of his own, which made a total of 104 cases, 63 of which were chylous, 21 chyliform and four undetermined. Shaw in 1901 collected 11 additional cases and added one, making 116 cases of milky ascites, 73 of which were chylous, 33 chyliform and 11 doubtful. Verdelli, 1894, and Comey, 1903, made less complete tables. The latest collection is that of Boston in February, 1905, who collected 126 cases and added two. No one of these lists is probably final for its

Cases of Milky Ascites Associated with Cirrhosis of the Liver.

No.	Author.	Date.	Reference.	Age.	Sex.	Pathogenesis.	Nature of Fluid.	Termination.	Autopsy.
1	Weaver.	1814	Med., Surg. and Pharm. Reps. II, p 377.	. . . .	M	Probably liver disease.	Chylous.	Death.	o
2	Méhu.	1878	Traité Pratique 1878, p. 215.	. . . .	M.	Cirrhosis of liver	?	?	
3	Veil.	1882	Paris Thésé No. 21, p. 215.	25	F.	Gummata of liver.	Chyliform. Tapped.	Death.	+
4	Gaucher.	1882	Cited by Veil, p. 31.	47	M.	Cirrhosis of liver. Alcoholism.	Chyliform Milky at first then clear Tapped four times.	?	
5	Gaucher.	1882	Cited by Veil, p 36.	39	M.	Cirrhosis of liver. Alcoholism.	Chyliform. Clear at first Tapped six times.	?	
6	Senator.	1885	Charité Annalen X p. 314.	46	M.	Cirrhosis of liver. Chronic Peritonitis	Chylous. Tapped three times.	Death.	o
7	Váli.	1892	Allgemeine Wiener med. Zeitung, p. 13.	Young adult.	F.	Cirrhosis of liver. Chronic Peritonitis.	Chylous. Clear at first. Tapped eleven times.	?	
8	Author.	1905	. . . . .	74	M.	Atrophic cirrhosis of liver. Alcoholism. Thrombosis of Receptaculum Chyli.	Chylous; Tapped three times.	Death.	+

pressure. Again, was the fluid a mixture of ordinary ascitic fluid and chyle, or was it pure lymph and chyle? Foster estimates that about one-half a liter of lymph and chyle is discharged from the thoracic duct in an hour. At this rate there would be no necessity for assuming an additional transudation of serum; but the history of the case and the previous attack point toward an antecedent ordinary ascites. The chylous ascites probably dated from the beginning of the fatal attack. The spasms and the wasting of the left thigh are probably referable to irritation by the fatty mass that directly overlay the lumbar plexus of this side. No examination was made of the brain, cord or nerves.

Literature.—Poncy is credited with observing the first case of chylous ascites in 1699. His patient, a girl aged nineteen years, furnished 289 French pints of milky fluid by 22 punctures, and

time; and Boston's certainly seems to contain duplicates, as, for example, cases number 54 and 56, and 38 and 49. At any rate, aside from the rarity of the condition, these lists show such a remarkable increase in recent years that the extreme rarity may be questioned. In 190 years Busey found recorded 28 cases of chylous ascites. In the last fifteen years since Busey's article some 50 more cases of chylous ascites have been reported.

The following table contains all the recorded cases of milky ascites that have been associated with cirrhosis of the liver. As will be seen, they throw no light on the case in hand. The first one is doubtful at best, and there is no record of such a journal at the Surgeon-General's Library; but the case is frequently listed. The second case is a mere mention of a milky fluid obtained from a cirrhotic. The third, fourth and fifth cases are

not pertinent, as the fluid was chyliform and not chylous. The sixth and seventh cases bear some clinical resemblance to the case here described, but the lack of an autopsy disqualifies them. The foregoing case, then, seems to be the only sure one of its kind on record; but the possibility of a similar series of events may be not so very remote.

The writer is greatly indebted to Dr. Blackburn for advice and for the preparation of the drawings.

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STRICTURES OF THE URETHRA; THEIR PATHOLOGY AND TREATMENT.

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THE term stricture is derived from the Latin "*stringere*"—"to bind"—and in the following discussion will be limited to those conditions of the urethra in which the lumen of the canal has become diminished in caliber by a disease process in the wall caused by gonorrheal urethritis. This includes the large majority of strictures as those from superficial infiltration and formation of connective tissue in the corpus spongiosum around the urethra from prolonged inflammation, or "breaking the cord." The spasmodic and inflammatory strictures will not be dealt with except in the cases where these conditions develop in an ordinary stricture.

Sir Henry Thompson[1] says there are no diseases that are so successfully managed, if you understand what you are about, nor any in which you may make such *dangerous mistakes*, if you are not well acquainted with the subject. The urethra is a most delicate and elaborate structure, and possesses a sensitiveness to pain that is not surpassed by any part of the body. In addition to this is another form of sensibility which is of great importance, and that is the tendency to arouse a state of excitement of the entire nervous system as shown by rigors, prostration and perhaps, subsequent fever, if the urethra is injured in any way and especially in the posterior part. The widespread nervous connection of the prostatic urethra justifies its being called the *solar plexus* of the pelvis.

The classification according to size generally adopted is: (1) *A linear stricture*, which is as if a cord had been tied around the penis. (2) *An annular stricture*, which is broader, like a band surrounding the urethra. (3) *A tortuous stricture*, where perhaps 5 cm. to 7 cm. (2 to 3 in.) of the canal is involved, changing it into a devious, irregular canal. Between these may be found an infinite number of sizes.

Their characteristics, when treated, give another classification: (1) Simple strictures, that are readily dilatable. (2) Irritable strictures, that are hyperesthetic and bleed easily. Probably a better name for these would be *inflamed strictures*, as it suggests treatment to allay this inflammation which is totally disregarded by many surgeons in the management of these patients. (3) *Resilient or elastic strictures*, which are easily dilated but recontract almost immediately.

According to the degree or stage of the organization, we may have: (1) *Soft or recent strictures*, before the inflammatory exudate has undergone the process of organization; (2) *cicatricial or inodular strictures*, after the complete change to fibrous tissue. The degree of this change is important and must always be borne in mind in making a prognosis and in selecting the treatment, although it is often difficult to determine, since neither the duration nor the caliber of the stricture may be taken as a sure index of the condition.

There is another arbitrary division into strictures of *large caliber*, comprising those above 15 F., and strictures of *small caliber*, which are 15 F. and below.

Strictures are also called permeable or impermeable, depending upon whether or not an instrument can be passed; this however, has to do with the skill of the surgeon, as well as the conformity of the constriction. Urine can nearly always pass, even in very tight strictures, therefore it is not logical to call them *impermeable*.[2]

Location.—The consensus of opinion is that the majority of strictures are found in the bulbomembranous region; next comes the first 6 cm. (2½ in.) of the urethra. In years gone by a bitter fight raged about this point, Thompson and his followers claiming the former view was correct, while Otis and his school believed the anterior portion of the urethra was the most frequent seat. Otis claims a stricture is most likely to form where the inflammation begins the earliest and rages the hottest, but most surgeons believe it occurs most frequently where the inflammatory process persists the longest, and this is the bulbomembranous region.

As to the number, there is also a diversity of opinion, although the majority believe they are usually multiple. The possibility, however, of a stricture or a point of irritation in the anterior urethra causing a muscular spasm in the deeper urethra, which simulates a stricture, must always be remembered. This fact was advanced by Follet[4] in 1857, and has been verified by many subsequent observations. Lydston thinks points of normal contraction or inelasticity act as pre-

disposing factors in determining the site of a stricture, on account of the increased strain and friction at these points caused by the passage of the urine.

Pathology.—The pathology seems to have been unknown to the ancients, who believed retention of the urine was caused by "caruncles," "excrescences," etc., and it was not until 1765 that Dionis[5] showed by the post-mortem examination of the bodies of those who were supposed to have suffered from these "carnosities," etc., that the actual trouble was a stricture. These views were not generally accepted, however, for many years. In 1793 Benjamin Bell championed the cause of those combating the theory of "excrescences," etc., and advanced ideas very similar to those prevailing to-day. Desormeaux in 1865 discovered localized inflammation with granulations, and called it granular urethritis. Gouley agreed with him, that this was the formative stage of a stricture.

These points of localized inflammation with congested and granular patches or inflamed glands are usually the starting points where the gonococci, lurking in the follicles and depressions and protected from the urinary stream and medication, cause by their inflammatory action the formation of a deposit of round-cell infiltration which is a barrier thrown up by nature to limit the inflammation. This gradually becomes organized and forms a stricture. There are, however, cases occasionally encountered where the obstruction is a "membranous septum" partially occluding the canal. The method of formation is not understood.

Rupture of the urethra in severe chordee, or when the "cord" is broken, is repaired by round cells which later form fibrous tissue and cause the worst form of gonorrheal stricture. The inflammatory exudate may be limited to the submucous and perifollicular tissue, but later may involve the corpus spongiosum, and has mixed with it the normal tissues of the urethral walls. As the infiltrate gradually changes to fibrous tissue, the normal parts are absorbed, until finally, in long-standing cases, it is changed completely into dense, firm, fibrous tissue and is then an inodular stricture.

There seem to be perhaps three methods of formation: (1) An inflammatory infiltrate is deposited beneath the mucous membrane during the acute attack and failing to clear up, or possibly forming at a point of normal narrowing from the friction and irritation of the urinary stream. Over this, upon the mucous membrane, a congested or granular patch forms. (2) The order may be reversed, and the prolonged localized inflammation cause a round-cell infiltration beneath in the submucous tissue. This begins most frequently around the mucous depressions. (3) The formation of scar tissue to repair injury done during chordee or in passing an instrument.

Lydston thinks points of normal narrowing are most likely to be the seat of a submucous deposit, and in this way they are of pathological importance. The lumen of the canal becomes gradually occluded, so that only a small quantity of urine will pass, but it is rarely complete except in certain traumatic obstructions.

The stricture may be most irregular in shape, and although it nearly always surrounds the entire urethra, different segments show different degrees of thickness. It is usually most extensive on the floor of the canal, and the opening is frequently eccentric and varies according to the location and extent of the deposit. One-half to two-thirds the diameter of the spongy body may be altered or obliterated, and this often extends beyond the point of constriction.[2]

White and Martin think the glandular and lacunar lesions of a stricture are constant, and that they play an important rôle in the production of the submucous infiltration. The irregularities and nodular masses observed in the walls of the urethra often originate in the glands and the ducts. It is in treating these deep lesions that are not reached by irrigations and injections that massage of the urethra on the medicated sound is of signal benefit.

Strictures are occasionally attended with hypertrophy and induration of the penis and tumefaction of the prepuce.[6]

The canal in front of the constriction is usually more or less inflamed, and particularly the glands, which may become dilated with their secretion. The urethra may become smaller on account of its not being dilated by a full-sized stream of urine, and also because of the inflammatory process.

Posterior to the stricture an inflammation is constantly seen, and is due to the presence of a small amount of urine which is not expelled on account of the constriction and the irregular muscular action of the urethral walls. This retained urine acts as a foreign body and irritates the mucous membrane, increasing the inflammation. Nearly all works on the subject claim this urine undergoes ammoniacal decomposition, but I cannot see how this is possible, as it is retained for such a short time, being washed out at each act of micturition, which all authors agree is increased in frequency. Urine does not decompose so quickly. To determine this point positively, I made an artificial stricture with a small strip of adhesive plaster and had urine retained in the urethra 3½ hours. It apparently underwent no changes as to reaction or otherwise. Of course this is not similar to the conditions found in severe cases where the bladder is infected and the urine is already alkaline and perhaps fetid. The same changes that are taking place when it is passed will continue. These cases, however, are rare. That irritation is caused by the retained urine I do not deny, for the function of the urethra is to afford a passage for the urine, and not a cavity for its retention. Therefore I advise that the

urine be massaged, by the patient, from behind the stricture by a milking process from above downward; this should be done after each act of urination, but it is well to defer it a few minutes until the last drops of urine have been forced down from the deep urethra.

The canal back of the stricture becomes thin and pouched and its walls are prevented, by the exudate, from lying in close apposition as in the normal urethra. Most of the gleety discharge and shreds come from this point, and if the inflammation progresses, superficial or deep ulceration may take place, an abscess may form and rupture, and fistulæ result. Urine may be forced into the tissues through this rent, and if it is extensive, dangerous extravasation follows. Its usual course is down into the scrotum and up on the abdominal wall, but this depends upon the location of the rupture. The extension of inflammation down a follicle is probably frequently the starting point of the abscesses and the urinary extravasation.

Just as in all chronic urethral inflammations, the epithelial lining is thickened and there is a partial desquamation and a tendency toward the transformation of cylindrical epithelium into the stratified pavement.[2] The openings of the glands and follicles become dilated, and there may be a reticulated condition back of the stricture. The mucous membrane may be dilated into pouches at the weak points in the surrounding tissue, and here, where the urine is not swept out at each act of urination, it may undergo decomposition and in some cases form calculi. The inflammation extends back toward the bladder, involving the glands of Cowper, with their ducts, the prostatic follicles, the ejaculatory ducts and the seminal vesicles. There may be a urethrocystitis with frequent urination, tenesmus and an urgent desire to urinate.

The mucous membrane of the bladder becomes thickened, soft and pulpy, and much congested in patches, or the entire wall may be of a dark red color and covered with slimy mucus. The retained, decomposing urine sets up the inflammatory process. The bladder wall hypertrophies to overcome the retardation of the flow of urine, and the bundles of muscle fibers stand out in ridges. This may progress to a *concentric hypertrophy*, where the wall becomes 1 to 2 cm. (½ to ¾ in.) thick, and the capacity of the bladder is greatly diminished.

A more likely change, however, is gradual dilatation and thinning of the wall, *eccentric hypertrophy*, the mucous membrane being forced out into sacculi at the points of least resistance. Retained urine may decompose and form encysted calculi. The weakening, thinning, and distention may cause it to rupture with extravasation of urine. This is more rare than rupture of the urethra.

The inflammation and dilatation finally involve the ureters, with a thinning of their walls and an extension of the process to the pelves of the kidneys. The urine now contains albumin, and there is a deposit of round cells throughout the kidney substance. Infection may reach it and abscesses form, resulting in the condition known as surgical kidney.

The Constitutional Treatment.—In no disease is a well ordered, temperate life so necessary as in the management of a stricture. The weakened condition of the kidneys requires that the duty imposed upon them be lessened as much as possible by a light nourishing diet, regulation of the bowels, and maintaining a healthy condition of the skin by frequent bathing and friction; stimulants, especially effervescing ones, as beer and champagne, highly seasoned food, cheese, cabbage, salt meats, strong coffee, and all articles which tend to load the urine should be avoided.[6] Sexual excesses and tobacco are harmful, as is exposure to cold and wet, especially chilling of the feet and legs.[7] Flannels should be worn in cold weather. Moderate exercise, avoiding overexertion or fatigue, is useful in maintaining the general health. A hot sitz bath just before retiring lessens the congestion of the pelvic viscera and tends to prevent spasm and congestion of the stricture.[7]

Attention to the urethral inflammation is always important in the management of a stricture, for it not only diminishes the danger of complications and relieves many of the symptoms, but also brings the tissues around the stricture into a more normal condition, thereby increasing their power to absorb the exudate. There are several methods that may be used with advantage by the surgeon in treating the inflammation, as hot irrigations; .3 to .6 gm. (gr. v-x) of nitrate of silver to the 30 c.c. (oz. 1) of lanolin injected back of the stricture and into the deep urethra with a Tommasoli ointment carrier; the treatment with medicated sounds is of great value in treating the inflamed membrane and glands and at the same time dilating the stricture.

A frequent mistake made in the management of a stricture is to wait until the constriction is relieved before attempting to cure the inflammatory symptoms. The fact that the inflammation is the primary trouble and that the stricture is secondary, from a localization of the inflammatory process, seems to be ignored by the majority of surgeons in dealing with this condition. Why not apply the rule so constantly used in medicine and surgery, to remove the cause, if possible, in treating a disease? If this localized patch of inflammation was a factor in depositing the infiltrate that formed the stricture, have we any reason to believe the continuation of this inflammation will not still act as a cause, and by a further infiltration increase the size of the stricture? The continued inflammatory action in the mucous membrane and follicles at other points in front of the stricture must have the same tendency to cause an infiltrate and stricture that exists in any other chronic urethritis.

I fully appreciate the part a constriction plays in keeping up the inflammation back of it, as well as the tendency of the inflammation of the urethra at the stricture to increase the size of the deposit there, or result in a second coarctation in the canal anterior to it. Bear in mind this "vicious circle," and that both dilating the canal and allaying the inflammation will certainly afford the most satisfactory results, increasing the number of cures by gradual dilatation by decreasing the number of irritable and resilient strictures. To obtain dilatation and at the same time medication of the mucous membrane and glandular depressions, with massage of the inflammatory exudate, I know of no treatment superior to the sounds coated with solidified ointment, as described later.

By careful attention to the inflammation of the urethra and to the general hygiene, much better results may be obtained from either dilatation or urethrotomy, for even when the stricture is incised its absorption can take place more promptly if the surrounding tissues are more healthy. The condition back of the obstruction is further improved by systematic milking of the penis by the patient after each act of micturition to remove the small quantity of urine that tends to remain and increase the inflammation, and perhaps finally cause an ulcer or a weak point through which infected urine may be forced and result in an abscess or urinary infiltration. Treatment of the mucous membrane to relieve the inflammation lessens the danger of such a consequence.

Selection of the Method of Procedure.—This often requires much "nicety of judgment," for upon it and the attention to details largely depends the success of the treatment. The location of the stricture, its duration, density and caliber, the secondary damage already done, and the general health of the patient, with special reference to the bladder and kidneys, are all to be considered.

Strictures near the meatus must always be *incised*, as the abundant nerve supply makes any attempt at dilatation very painful and the tissues do not dilate. The results are always unsatisfactory. Simply a small meatus without any symptoms referable to it should not be interfered with, however, as many patients are made more susceptible to subsequent infections, and have the discomfort of spraying the urinary stream on account of a useless operation, perhaps, for some vague urinary symptoms that a more careful surgeon finds are due in many cases to a nodule in the prostate or a chronic inflammation of the deep urethra. If there is a pouching of the canal just back of the meatus, it should be incised. There are also certain cases of gleet due to inflammation posterior to it that are cured by this operation. It is also necessary in the treatment of deeper strictures. Indiscriminate meatotomy, however, is to be heartily condemned.

Dilatation.—The consensus of opinion is that this is the safest and most efficient method of treating strictures, except in the anterior part of the canal, where they should be cut. This may be applied to all permeable strictures. Soft recent ones may be permanently cured by this method. Dense, fibrous, inodular strictures are *cured* with difficulty, if at all, by any procedure; it is usually best to incise them and then treat with sounds, to remove some of the abnormal tissue, as it is not in keeping with other pathological observations to believe that making an incision in an old inodular stricture will result in its absorption.[2] The wound is repaired with a scar which eventually contracts as all scar tissue does, and we still have a ring of fibrous tissue around the urethra, of larger caliber, perhaps, but always liable to contract unless sounds are passed at intervals of varying lengths.

Generally speaking, one may say that all uncomplicated strictures except those near the meatus should be treated by gradual dilatation where there are no contraindications, or an irritable or resilient stricture. Strictures complicated with abscess, urinary infiltration, or intractable cystitis should not be treated by dilatation, but as a rule by external perineal urethrotomy. Attention to the general health, diet and hygiene, with judicious treatment of the inflammation of the urethra as described, will enable the surgeon to treat successfully the larger number of strictures by gradual dilatation, which undoubtedly is the safest method and at the same time furnishes the most permanent results. "Do not be a partisan of any single method, but consider carefully the selection of the treatment for each individual case."

Internal urethrotomy may best be considered as a valuable adjunct to gradual dilatation, for incision of an irritable or resilient stricture enables the surgeon to remove at least part of the deposit by passing sounds and massage, as well as to lessen the inflammation of the canal.

Just as good results come from meatotomy, which is incising a normal narrowing. Thus the best results come from internal urethrotomy in those cases where the inflammatory deposit is engrafted upon a normal narrowing. It is in such cases that permanent cures may come from internal urethrotomy, because inflammation at a point of normal contraction and the irritation and friction of the stream of urine results in the round-cell infiltration and stricture.[1] By removing the point of narrowing, even though it were a normal one at the start, the irritation caused by it ceases, the vicious circle is broken, and as part of the cause of inflammation is relieved, the condition of the canal improves and more or less of the exudate may be absorbed.

According to my conception of the pathology of strictures, I cannot see how *cures* may be effected by internal urethrotomy, except in some condition similar to the one just described. Let

us consider a moment the cicatricial contraction about the eye in case of an ectropion; will an incision of this scar prevent its contraction? All will say, No. Is not the stricture similar to scar tissue? Evidence that they do recontract even when *all* the stricture is cut, is shown in the cases of external urethrotomy, where the stricture recurs after *complete division.* That they recontract at times after thorough dilatation I do not deny, but I do claim that the rationale of treating a stricture by gradual dilatation is more evident than by internal urethrotomy, except in the cases excluded above.

Internal urethrotomy of strictures of the deep urethra is dangerous on account of the excessive blood supply, poor drainage, and abundant nerve connections. The deeper the stricture, the greater is the danger of internal incision, but as these usually respond more readily to dilatation than those in the penile urethra, it is rarely necessary.

External perineal urethrotomy is indicated in those cases where stricture of the deep urethra fails to respond to dilatation or is irritable or resilient or complicated by abscesses or urinary infiltration, or where inflammation of the bladder demands this operation in order to secure good drainage. This may also be used when, after much patient work, a filiform has been introduced into the bladder.

False passages may also indicate this procedure. Complete retention of urine with an impassable stricture always demands this operation, and it is better not to waste too much time trying to pass a filiform when the symptoms are *urgent,* but to use a curved trocar, as will be described later, and do a retrograde catheterization to enable the surgeon to find the posterior urethra, cut the stricture, and reach the bladder. This is far preferable to the Wheelhouse or Cock's operation.

Syme[8] advocated external perineal urethrotomy for uncomplicated, irritable or resilient strictures of the deep urethra, and this method has proven of service in a certain number of cases where persistent dilatation fails and the symptoms caused are of sufficient consequence to justify such radical measures to relieve them, as the mortality is lower and the results better than from internal urethrotomy.

Forcible dilatation and divulsion are unsatisfactory, and only in rare instances is the surgeon justified in adopting these methods. In certain cases where extreme dilatation is desired without so wide an incision of the meatus, the Kohlmann dilator may be used, but great care must be taken to avoid more rapid dilatation than would result from gradual dilatation with sounds.

Continuous dilatation is to be used only in cases where with great difficulty a filiform has been passed through a tight stricture or by a false passage. It may be left in twelve to twenty-four hours to ensure the passage of other filiforms or a larger instrument and start gradual dilatation later.

Removal of strictures by caustic is purely of historic interest, as the constriction that followed the healing process was always worse than the original obstruction. Electrolysis has also been shown to possess little value. Total excision of extensive inodular strictures has been done with success, but this operation is rarely required except in traumatic strictures.

The theories of the changes that take place while gradually dilating a stricture have been varied and unsatisfactory. Most authorities agree that the sound, acting as a foreign body, and by the pressure, causes a reaction and absorption of a small amount of the tissue. Just why this absorption should take place has not been clearly shown, and as the condition is one that cannot be studied very well during the treatment, we can only make conjectures as to the process. From a study, however, of the pathology and the results from the different treatments, it seems that the sound in passing the stricture injures, by pressure, stretching or rupturing, the tighter fibers of the constriction, and if the number of injured fibers and cells are small they probably undergo a necrosis and are absorbed. If, however, the damage is extensive, it is repaired by scar tissue just as an injury to any other part of the body. The cicatricial tissue then contracts and defeats the very object we desire. This fact is clearly shown by the results which follow divulsion of the urethra or two rapid or rough dilatation. Our object by gradual dilatation is, at each treatment to make minute injuries of the constricting fibers or cells, to cause them to undergo necrosis and be absorbed without doing sufficient damage to require repair by scar tissue.

Massage on the sound and treatment of the inflammation around the stricture improve the tone of the blood vessels and lymphatics, and in this way hasten absorption. As this is only a theory from study of the pathology, treatment and results from various methods, it would not be given but for the fact that it emphasizes a point which I desire should receive most careful attention, and that is the importance of *gradual dilatation with sounds, that require no force to pass the constriction, and appropriate treatment of the inflamed urethra.* If the surgeon has this tangible conception of the good that is to be derived from very gradual dilatation, he will be far less liable to develop an irritable, intractable stricture from one that, properly treated, would be easily cured. Let him always bear in mind that when much force is used, damage is done that will be repaired by scar tissue, which will ultimately contract.

A number of authors mention cases that readily yield to treatment by dilatation up to a certain point and then refuse to be further dilated, and an irritable condition develops. My idea of these cases is, that they are strictures devel-

oped at normal narrowings in the canal, and as long as it is the adventitious exudate that is being absorbed all is well, but when the normal narrowing begins to be dilated trouble begins, just as if a narrow meatus were being dilated. Incision will give prompt and satisfactory results. It is by failing to recognize these points of physiological narrowings and by *too rapid dilatation*, that reproach is brought upon the method of gradual dilatation. Normal narrowings deeper in the urethral canal yield almost as poorly to dilatation as does the meatus, and must always be cut.

The treatment by gradual dilatation is the simplest, safest and most efficient method of treating strictures. It does more than dilate the constriction, for, like pressure elsewhere, it has the power of producing absorption of the inflammatory deposit,[6] and undoubtedly this takes place more rapidly if the surrounding tissues are more nearly normal than if they are chronically inflamed. A thorough examination should always be made, noting the condition of the kidneys, bladder, prostate, urethra, and the number, location, and character of the strictures. After the examination the urethra is irrigated with a weak hot solution of boric acid, potassium permanganate, or mercuric chloride, and 2 gm. (ʒss) of the following salve:

℞ Nitrate of silver.....0.3 gm. (gr. v)
Glycerin.....4 gm. (ʒi)
Lanolin.....30 gm. (ʒi)

This is introduced just back of the stricture and into the deep urethra with a Tomassoli ointment carrier, to allay the inflammation. This treatment is repeated on the following day. In case the reaction from the exploration was excessive and the canal is very sensitive and the discharge more profuse and purulent, the irrigation only is used. On the third or fourth day the largest sound that will pass easily is cooled in ice water and introduced and retained for five to eight minutes and then replaced by another sound three sizes (French scale) smaller, covered with solidified ointment. These are prepared as follows: Cocoa butter, 180 gm. (ʒvi), containing 2 to 3 gm. (gr. xxx to xlv), of nitrate of silver, is melted and the sounds are sterilized and placed in a pitcher of ice water; the smaller one is dipped into the medicated ointment and then manipulated so as to obtain a smooth uniform layer as it hardens. This may be placed in the water until needed. The first sound is passed and having prepared the way, the medicated one may now be introduced, and the ointment massaged into the folds, follicles and depressions of the mucous membrane, especial attention being paid to the indurated points and stricture. The nervous chills that sometimes follow the introduction of the instruments from the vasomotor disturbance may be prevented by the use of sounds prepared in this way with cocaine to anesthetize the urethra and block the passage of the impressions that cause them.

These treatments are to be preceded by irrigations, and repeated daily, every second or third day as the symptoms and reactions indicate.

It is far preferable to dilate the stricture to a *slight degree* and treat the inflammation daily or every second day with sounds that will easily pass and not create an excessive reaction, than to introduce much larger sounds less frequently. An increase of one size French every other treatment will usually be most satisfactory and permanent in its results. The ointment-coated sound may be left in the urethra three to five minutes. The gradual dilatation, cold, medication and massage enable one by a single treatment to bring into play more factors to relieve the constriction, lessen the inflammation of the mucous membrane and glands, and to hasten the absorption of the inflammatory exudate, than by any other single treatment.

Certain cases will resent the introduction of a cold sound until the inflammation has somewhat subsided, and in these cases the stricture is dilated *very gradually* with plain sounds, but after each treatment the ointment of nitrate of silver and lanolin is deposited back of the stricture and also in the deep urethra, as it is usually involved. This is also valuable in treating the inflammation posterior to the stricture between the dilatations when the interval is of several days' duration.

Daily irrigations are necessary in all of these cases as well as in those of small calibre, which should be dilated gradually with gum instruments, after which the salve is deposited back of the stricture with an ointment carrier. The dilatation progresses more rapidly in small strictures than in those of large caliber.

The increase in the size of the sounds in all cases is determined by the reaction which follows, by the ease in passing the instruments, and by the "grasping." The surgeon has constantly a demand for the use of good judgment in deciding upon the frequency of the treatments and the size of the instruments to be used.

Haste is always harmful, and it is far better to dilate several times with the same sound and *massage* the stricture, than to use one that causes pain and an over-reaction. The surgeon must constantly bear in mind that his effort is not to *divulse* the stricture, but to aid in its absorption, and this is best attained when the mucous membrane and urethral walls surrounding it are most nearly normal and the reaction is slight and of short duration. This should be kept up regularly until the symptoms and caliber justify less frequent treatment. So great is the difference in the character of strictures that it is almost impossible to give in days, weeks or months the time required for a cure. Recent soft constrictions are usually very prompt to yield, but old, inodular ones are just the reverse, and between these extremes there is an infinite variety. As a preliminary it is sometimes necessary to do

internal urethrotomy, where the stricture is irritable or resilient, or is situated upon a point of normal narowing which always dilates poorly. After internal urethrotomy the infiltrate can be absorbed much more rapidly if the above treatment is adopted.

When 28 F. to 32 F. is reached, the canal may usually be considered normal, unless induration still persists. By carefully carrying out the above technic and treatment, all the urinary and sexual functions rapidly improve and a lingering gleet is rarely encountered after the constriction is removed. The strength of ointment is to be gradually increased as the urethra will bear it. Other drugs than nitrate of silver may be used as may seem to be indicated for the case in hand.

Further good that comes from this method of treatment is a lessened tendency for instrumentation, to be followed by rigors and fever. Argued either from the standpoint of the surgeons, who claim that the trouble results from absorption back of the stricture, or from the other view, that the cause is reflex from the sympathetic connection, both would naturally be less marked if the inflammation of the canal be diminished. By using proper care in the treatment to obtain bland, unirritating urine, and by irrigating the canal and sterilizing all instruments, serious complications are rare. No method is more conservative or is likely to cause less difficulty when secondary kidney lesions exist.

The patient is shown the importance of a careful, regular life, and is instructed to milk gently down the last few drops of urine that remain behind the stricture at the end of each act of micturition, which is an irritant and increases the inflammation. The facility of doing this decreases as the deep urethra is approached, and in the bulb requires more care and upward pressure along the urethral canal to force the urine through the stricture. By decreasing the urethral inflammation and attention to diet, hygiene, etc., the tendency to acute retention is greatly lessened.

The progress is more rapid at first in strictures of small caliber, but becomes slower as the canal becomes more nearly normal. Generally speaking, the more abnormal the constricting tissue, the more successful is the dilatation; whereas the nearer normal the obstruction, the more efficient is the treatment by internal urethrotomy.

Difficult Cases.—Eccentric openings, tortuous strictures, and false passages are the most frequent causes of failure of a competent surgeon to pass instruments. The infiltrate is usually most marked in the lower urethral wall, but may be at any other point. This, and the looseness of the lower segment of the canal, make it the most frequent seat of false passages. In introducing a sound, the point of the instrument should always be kept well up against the superior wall (except at the meatus), which is the most fixed part of the urethra. If difficulty is experienced in passing the stricture, the urethra is filled with olive oil and fine French filiforms are introduced. These are preferable to the sharp and more rigid whalebone filiforms when they can be used.[2] If a straight filiform fails to pass, one of whalebone, with an abruptly bent point or twisted into a spiral, should be tried. Many years ago Gouley recommended that filiforms be passed until the false passages and depressions in the mucous membrane were all filled with them, and by sucessively moving one after another, the stricture could usually be passed. By dipping whalebone filiforms into hot water they may be bent as desired and retain the shape when cool. The reticulated condition back of the stricture sometimes stops the filiform, after the stricture is passed. Kümmell has introduced fine probes through the endoscope after other methods had failed.[3] If there is doubt as to being able to pass the filiform again, one of several courses is open to the surgeon, according to the conditions, surroundings, and urgency of the symptoms. The treatment must always be sufficiently radical to overcome the inflammatory reaction which follows the passage of an instrument, otherwise complete retention may supervene: (1) The filiform may be left in place for twelve to twenty-four hours and gradual dilatation instituted. The propriety of this depends upon the history of the stricture and the prospects of cure by this method. The urine will gradually pass along the filiform, so that even if there is some retention it will not contraindicate the adoption of this procedure. (2) An internal urethrotomy may be done in the anterior urethra and sounds passed later to cause the absorption of the stricture. (3) An external urethrotomy is preferable where the symptoms are urgent, as in urinary infiltration, abscess, severe cystitis with distention and back pressure affecting the kidneys; also, if the stricture is irritable or resilient, a tunneled instrument may be passed over the filiform and the stricture divided. (4) Divulsion might be used in certain cases to relieve some of the urgent symptoms, and the cure carried out later by gradual dilatation. This should not be used unless there is some positive reason why the other more reliable methods should not be employed. In case a false passage is made the urethra is irrigated and the patient kept quiet on a light diet, bland drinks, and urinary antiseptics. No further attempts are to be made for about three weeks, unless there is some distinct reason for interfering.

Internal Urethrotomy.—This operation has a mortality of about 2 per cent., which increases with the depth of the stricture. This danger, though slight, should always be remembered in deciding upon the procedure. The patient's general health and the condition of the kidneys, bladder and urethra should be brought as nearly normal as possible by a few days or a week's preliminary treatment, and the urine rendered bland

and free from infection by the administration of drugs, as boric acid, salol, and urotropin.

The urethra is irrigated and anesthetized with cocaine, 2 to 4 per cent., or a 5-per-cent. solution of cocaine in distilled water, or in a somewhat stronger solution in cocoa butter solidified on a sound, as preferred or indicated. A general anesthetic is rarely necessary.

Very satisfactory anesthesia may be obtained by the injection of ⅛ to ¼ grain cocaine into the root of the penis around the nerves as they emerge from beneath the symphysis pubis. I have used this method many times, since the idea occurred to me about six months ago, and have found it very useful in any operative procedure in the anterior portion of the penis. (It seems particularly indicated in priapism and in cauterizing chancroids, etc.)

Internal urethrotomy is applicable to strictures of the deep urethra in which dilatation has failed or has been rendered impossible by the presence of dense, firm strictures, and in certain cases where it appears feasible, to restore quickly the normal caliber [8] and hasten the absorption by the treatment with gradual dilatation with medicated sounds and massage of the infiltrated points. Urethrotomy is best suited to "valves or bands" or normal narrowings, but is not applicable to impermeable strictures or those complicated with urinary infiltration or with abscesses or fistulæ.

The various instruments that have been devised for this operation will not be discussed, but the one the surgeon is most accustomed to is usually the most desirable. The caliber of the stricture is also a factor to be considered in selecting an instrument, for if the constriction is very tight, a Maissoneuve, or Gouley's small tunneled urethrotome, to follow a filiform, is necessary to get the canal large enough for a dilating urethrotome. The Otis-Wyeth is very satisfactory, and is to be introduced until the point from which the blade will emerge is well back of the stricture. The incision is to be made in the roof of the canal in the median line, after dilating until the tension of the stricture is felt. The blade is now brought forward firmly and steadily, cutting the entire stricture and for a small distance in front and behind the constriction. The blade is replaced and the instruments removed, taking care to avoid cutting the mucous membrane, and a bulbous bougie is passed to determine if all the stricture is cut. If not, another incision is made to complete the operation. A sound is passed to insure patency of the canal.

The hemorrhage is usually not severe, and may be checked by pressure on the penis at that point, or by the application of cold. If necessary, a catheter may be passed and pressure applied around it until checked, or a perineal pad lightly applied.

The patient should remain quiet in bed several days on a light diet and plenty of diluent drinks. Before leaving the patient, usually give a suppository of

℞ Extr. opii.....gm. .06 (gr. 1)
Extr. hyocyamus.....gm. .03 (gr. ½)
Extr. belladonna.....gm. .015 (gr. ¼)

to allay pain, and to lessen the danger of a chill. Prevent erections, which may cause hemorrhage and pain, by similar suppository, with monobromate of camphor gm. .3 (gr. v.). On the third or fourth day, if there is no hemorrhage, pass a medicated sound and repeat every few days or week until there is reason to believe the large part of the adventitious tissue has been absorbed.

External Peritoneal Urethrotomy.—Celsus gave directions for this operation for calculi, and Rhazes, in the tenth century, and Avicenna, in the eleventh century, are referred to as speaking of an incision in the urethra through the perineum for relief of retention of urine. It was used in a sporadic way until the nineteenth century.[9] The mortality was very high.

This is the method of treatment to be resorted to when the simpler methods fail or where there are complications, as an abscess or urinary infiltration, or when the bladder infection requires drainage. It is also safer than internal urethrotomy when the stricture is located in the deep urethra. Where the symptoms refuse to yield to dilatation good results have been obtained by external perineal urethrotomy. The operation is comparatively simple if a grooved catheter or sound, or even a filiform, can be passed.

The rules of Syme [8] are, briefly: "Be positive the guide has penetrated the stricture and entered the bladder, especially if false passages exist. Take care not to deviate the incision from the median line, and in this way avoid blood vessels. Keep the edge of the knife mainly upward to avoid opening the posterior layer of the perineum with consequent infiltration of urine. Insert the point of the knife posterior to the stricture and incise it by cutting from behind forward in the groove of the guide. Use a broad director to aid the passage of the instrument into the bladder if difficulty is encountered without guide."

Of more difficulty and danger are the cases where no instrument can be passed, even after the patient is anesthetized. This attempt should always be made, however, as the muscles may be relaxed so that the instrument will pass then, although they could not be introduced before. If this fails, after a careful, patient attempt, the method suggested by G. W. Penn,[10] of using a large curved trocar to puncture the bladder just above the symphysis pubis, is used, and a retrograde catheterization is done through the trocar with a blunt-pointed instrument having the same curve. This easily finds the dilated canal posterior to the stricture, and by using this, in addition to an instrument in the anterior canal

down to the stricture, it can be easily incised and the bladder reached without difficulty.

The operations of Wheelhouse and of Cock should always be replaced by this simple, safe and efficient procedure which completely removes the element of doubt and uncertainty that was invariably associated with the older methods, and lessens to a marked degree the shock of a prolonged search or a suprapubic cystotomy with its additional dangers.

The after-treatment of these operations is the same, whether done with or without a guide. The hemorrhage is usually not severe if the incision is kept strictly in the mid-line, and may be checked by clamping and tying spurting arteries and applying pressure with gauze around a catheter. A drainage tube may or may not be left in for twenty-four to forty-eight hours, as the conditions indicate. The tube may be connected, when the patient is placed in bed, with a long one leading to a receptacle for the urine. An abundant dressing of sterile gauze and cotton is applied and changed as often as soaked with the discharges. About the fourth or fifth day full-sized sounds are passed, and this procedure is repeated every three or four days as long as indicated. Light diet, bland diluent drinks, and urinary antiseptics are required.

Excision of Strictures.—König, in 1880, excised the scar tissue and united the ends of the resected urethra with sutures in the anterior wall only. Since then Mikulicz,[11] Tuttle[12] Guyon, Socin and many others have done the operation and closed the entire circumference, but leave a drain in the outer wound. This operation is rarely necessary in gonorrheal strictures, except those caused by "breaking the cord."[3]

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TREATMENT OF TUBERCULOSIS.[1]

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MANY of my hearers well remember what the treatment of consumption was and amounted to ten to twenty years ago. It may have been characterized by hopelessness on the part of the physician who ordered the treatment; an imperfect knowledge and understanding of what the disease was, the symptoms indicated and particularly how best to overcome them; and likewise by depression and discouragement on the part of the patient, who felt there was but one ending to the disease—the grave.

Light has been breaking through the darkness, gloom and despair surrounding these unfortunates of the great army of the White Plague with ever-increasing intensity year after year, until to-day countless numbers of physicians, scientists, philanthropists, legislators and the laity throughout the whole civilized world are enrolled together to fight this dread destroyer of the home. This powerful united action along the propaganda of education is waging a victorious warfare; another decade will reveal astonishing results; upon you and me as physicians rests a great responsibility in furthering the success of these combined efforts. To us first of all comes the consumptive; begin at once with the proper treatment and instruct the patient what to do so as to prevent the communication of the disease to others.

Tuberculosis is Curable.—Some, possibly many, of you are skeptical about this statement; it is proven by the autopsies made upon thousands of persons dying of other diseases, sudden deaths, accidents, operations, etc. Osler gives the percentage of healed pulmonary lesions at 7.5, Biggs, 30 per cent.[1]

The writer began his work in tuberculosis over fourteen years ago, in 1891, and was resident physician of the Adirondack Cottage Sanatorium for nearly five years. He personally knows of twelve physicians who positively had tuberculosis, eight of them have remained cured of their disease for thirteen years or longer, two for twelve and two for ten years. This is his own personal clinical proof of its curability among his confrères alone. Lawrason Brown[2] in a summary of 1,500 cases discharged from the Adirondack Cottage Sanatorium from two to eighteen years, gives the following: 1,066 patients were traced, 434 untraced. Of these 1,066, 46.7 per cent. are still living; 30 per cent. are well; 6.5 per cent. arrested; 4 per cent. have relapsed; 5.2 per cent. are chronic and 53.3 per cent. are dead. In other words, nearly one in three of all classes of patients treated remained well after two years or more.

The ideal means of treating this disease has not yet been discovered; while brilliant scientific research has demonstrated the possibilities of establishing immunity against the disease in animals, and the question of antitoxin treatment is still far from being solved, we need not supinely rest with our hands folded and leave our patients to their fate. The obligation is upon us and our duty is to cure them—many are cured without knowing it; we know of very many whom the physicians have cured; let each one of us add our quota to this number and our results will be surprising.

1 Read before the New Jersey State Medical Society, at The Symposium on Tuberculosis, Long Branch, June 22, 1905.

1 S. A. Knopf: Pulmonary Tuberculosis, 1899.

2 Lawrason Brown: An Analysis of Fifteen Hundred Cases of Tuberculosis, Journal American Medical Association, Nov. 22, 1903.

To-day the sanatorium treatment is surely the best we can offer such patients; those at the head of such institutions are more thoroughly trained, have had larger experience; the patients are under closer observation and the more exacting details of the daily life are watched more carefully; the patients, by force of example, are more willing to obey instructions and the climate must be reckoned as of value; above everything is the educational side of this life as a means of instructing the patients, not only how to take care of themselves at the present time, but also in the future; and finally how to prevent re-infection of themselves and communicating the disease to others.

More far-reaching benefits than to the patients themselves are secured by the presence of such an institution since, instead of being a menace to the health of those residing in the locality, statistics have shown that the death-rate from tuberculosis has fallen in the vicinity of sanatoria and consequently the phthisiophobia of the individual or the comunity is groundless.

The sanatorium treatment owes its origin to Hermann Brehmer, in Silesia, in 1859, and in this country to Edward Livingston Trudeau, in 1884. The same line of treatment which is carried out in a sanatorium, modified to meet the requirements of the individual and his surroundings, is what we must make use of. Even though we know that the sanatorium is the best place for these cases, there are two strong reasons why the practical application of this treatment in the home is necessary; first, the capacity of all the sanatoria, State and private, and all other institutions of like character, would be sufficient to take care of only a fractional part of all tuberculous patients; second, only a small number of these patients could afford to pay for such treatment or absent themselves from their homes for the proper length of time.

The treatment implies a greater duty on the part of the physician than making a diagnosis, stating what the patient is to do, writing a prescription or two and telling the patient to come back in two weeks' time; on the part of the patient a greater willlingness to obey implicitly the doctor's orders than is usually met with and a decision that he will assist the physician in every way. The physician must look with grave suspicion on every case of cough which presents itself to him; throat coughs, stomach coughs, bronchitic and asthmatic coughs, pleuritic coughs, etc., are terms much too commonly used by the physician to mask his unwillingness to tell the patient the exact condition of affairs. So it is with the terms "malaria" and the "grippe"; they serve too often as a cloak to cover a condition, the immediate recognition of which may insure the whole future well-being of the patient.

Above all things, always consider hemoptysis, or a little blood spitting, as direct evidence of tuberculous troubles unless you can positively see a ruptured vessel as the cause for it. In all cases precious time is lost by not acting upon this plain warning, and in some precious lives are surely sacrificed. At all times the physician must avail himself of every scientific means to clinch the diagnosis; study well the pulse rate and have a temperature record which gives a morning, afternoon and evening temperature; inquire minutely into the patient's well-being during the preceding months and look with suspicion upon a steadily increasing loss of strength and health, and particularly upon a loss in bodily weight. In every case make use of the State laboratory for the examination of sputum; let this be supplementary to the most careful physical examination which must be made on the patient divested of all clothing covering the chest. Many a case of pleurisy is overlooked in women because the corsets were not removed. If in doubt and still suspicious of the presence of tuberculosis, do not defer your consultation until the progress of the disease has stamped itself so indelibly upon the patient's features that the looking-glass reveals the trouble to the patient before you yourself have told him what is the matter.

The open-air rest cure embodies the principles of the treatment, fresh air in the open as many hours as possible in each twenty-four hours, fresh air inside of the house day and night, rest in the open air, superabundance of good food, exercise only as it does not produce certain positive symptoms; the proper attention to the skin by bathing, and the general laws of hygiene.

Fresh air, with and without sunshine, with and without dampness, with and without winds, with heat and cold; all these conditions must be met with in overcoming the natural inborn antipathy of patients to live in the open. Healthy people are always afraid of catching "cold," and as your tuberculous patient has even greater dread of this same calamity it is no easy task to get him to live out-of-doors in all weathers.

These objections and fears, which are very vivid and real to your patients, must be overcome by patience, firmness and a rational clear-cut method of procedure on your part. Impress upon them and make them feel that you are right when you say that fresh air will not give them cold, but save them from it. Rain or dampness will not affect them at all if they are under cover and do not get themselves wet. To overcome the sensation of chilliness or cold (be sure to distinguish between the chill of the disease and cold) do not use too heavy undergarments, but clothe with outergarments of heavy woolen texture or furs sufficient to keep warm out of doors. This is very essential, for otherwise when the patient goes indoors he will be likely to become overheated; the more completely they live an out-of-door life the less artificial heat do they require in the house and they can more readily divest themselves of or put on outside garments to keep themselves comfortable.

When treatment is begun in the colder months, instruct them to sit out an hour and then, if chilly, go in for a short time; by this means, after a period of a few days, you can readily accustom them to spend all their time in the air. When dealing with the symptoms of chilliness due to the disease, keep the patient in bed or on a lounge in the air, as this is the only means of combating the disease.

Avoid heavy winds by selecting a corner of the veranda which faces away from the prevailing wind. Flood the bedroom with air by opening wide the windows, thereby avoiding the smaller currents of air. When a patient sleeps out of doors a southern exposure is to be selected. This procedure, as also the sleeping contrivances whereby the patient sleeps with the head out of the window or with a hood over the head of the bed which is attached to the open sash and sides of the window, and then fastened under the top and inner sides of mattress, thereby preventing the temperature of the room becoming so intensely cold, demonstrate clearly that the patient is not harmed by large currents of air. When possible, patients should dress and undress in some other room than the one in which they sleep. One of the most prominent advocates of ventilation and the air-bath was Benjamin Franklin; Parton, in his autobiography, goes on to say: "He spoke, and the windows of hospitals were lowered; consumption ceased to gasp and fever to inhale poison"; truly an extravagant statement during his time, but which now approaches its consummation.

Rest must be absolute in all cases of hemorrhage, when the temperature is above 101° F., where the heart action is over 100, when there is a daily chill, during the first few weeks while you are observing the type of disease you are dealing with, in pleuritic cases when cough is increased by moving about, or when some fluid is found in pleural cavity, when patient continues to lose flesh or under treatment remains stationary well below the average weight. In the acute case or acute exacerbations of more chronic conditions the bed is imperative; in all cases save your patients every ounce of wasted energy and let them use it in building up their nutrition or increasing their resisting powers.

Food.—Usually the tuberculous patient has no appetite and yet food is the only means of overcoming the disease, and oversupplying the large daily bodily waste; superalimentation is the key-note of success; thereby you restore the appetite as well as the strength of your patient by natural means, instead of by stimulating tonic drugs, and a strict dietary should be given to each individual patient explaining how he can take the amount of food you require him to take. Meat should be eaten at least twice daily, and where possible add the squeezed juice of one-half to one pound of beef. Eggs are best taken raw, immediately after finishing the meals; begin on one each day and increase until at least six are taken daily. From one to one and one-half quarts of milk must be taken every twenty-four hours—one glass on awakening, one at meals, one in the middle of the morning and afternoon and at bed-time can readily be taken. Fat in the form of cream, butter, oily dressings and olives is to be freely taken. Add to these whatever the patient desires in the form of fruits, vegetables, cereals, etc., only avoid the free use of teas, coffees, sweets and pastries, pickles and highly-seasoned food.

Alcohol, despite the commonly reported good effects from its use, and tuberculosis are antagonistic, and the physician will find a very small percentage of cases in which it is indicated. Exercise must be controlled by the physician. The advice so often given to "Go West, young man, buy a horse and live out of doors," has sacrificed many a precious life. Do not exercise if hemoptysis occurs and never violently in hemorrhage cases; if temperature rises; if palpitation occurs; if dyspnea supervenes or cough is excited; or if it results in loss of weight. A good general guide is the degree of fatigue resulting from muscular effort; never produce overfatigue.

Of great importance, and oftimes greatly overlooked, is the question of bathing. The proper application of water will improve the surface circulation; act upon the vasomotor system so as to stimulate the functions of the secretory organs; improve the general nerve tone of the body; and save the patient from being affected by the temperature changes in the atmosphere.

Every patient, no matter how poor his surroundings, can sponge off the face and the upper extremities and the whole trunk down to the hips with cold water just as he washes his face on arising in the morning. Begin with cool water and lower the temperature daily until it is used as it comes from the faucet or well. If a bathtub is at hand run a few inches of warm water in tub and then sponge off the whole body with cold water as it runs from the tap. It may take a little time to accustom patients to the cold water, but once having educated them to its use they will never omit it.

A more vigorous and tonic procedure is to rub the patient all over with a very strong hot salt-water bath and then rub down with cold water afterward; this can be done in a bath-tub or with the patient lying in bed in a blanket. It does not need a skilled attendant; the hands should always be uncovered, no sponges or mittens used. These three forms of bath need not consume more than five to fifteen minutes, save when the salt rub is done in bed, when thirty minutes must be allowed.

The laws pertaining to hygiene should be most carefully looked after. The mere enumeration of them is all that is needed; the proper attention to the teeth, the mastication of the food, sufficient time for and regularity of the meals, the daily evacuation of the bowels; with women

give particular attention to the menstruation and do not seek to restore this function by drugs, if absent; always make an examination of the urine. Learn how much and how well your patients sleep. Finally, instruct one and all of them how to take care of their expectoration. Tell them emphatically that if they destroy their sputum they are to all intents and purposes incapable of communicating the disease to others. Compel them to use a disinfectant if they use spittoons—the simplest and surest means is to burn their expectorations; in lieu of cheese cloth or pieces of linen use a few pieces of toilet paper or newspaper; have a receptacle to throw them into and then burn the contents several times a day. Never permit your patients to spit into their handkerchiefs or swallow their expectorations. Various forms of spit-cups in paper and glass for pocket use are to be had.

Finally, as regards drugs, prescribe them only where a distinct indication for their use exists. For the cough, codeine and heroin have served the writer well—use as little as possible and stop them as quickly as you can. The use of carbonate of creosote in small doses (five to twenty minims after meals) will sometimes affect beneficially the cough and expectoration. Almost the only tonic the writer uses is the compound syrup of the hypophosphites, with or without strychnine. If you use cod-liver oil use it pure, and the best oil made; oil and water do not mix, and if the mouth and teeth and gums are thoroughly moistened with ice water and the surface of the spoon as well to prevent adhesion of the oil, a patient will scarcely taste the oil and will quickly get over any distaste for the drug. If only one dose a day is given for three days and then increased slowly until the full dose is reached, you will rarely have a patient come back to you and say that the oil was regurgitated. Remember you are going to use the oil for many weeks.

Success in treating this disease rests upon the tactful, sympathetic and painstaking manner of the physician in his dealings with his patient; in the constant care and personal supervision of his daily life and in noting every warning. The cooperation of the physician and patient is essential; this can never be secured unless you tell the patients what is the matter; the depression produced by the knowledge that they are victims of this disease is more quickly overcome now than later, and no one will blindly follow a physician's order unless a clear reason is given. The tuberculous individual must be made to understand that you are treating a disease and not simply a cough; hence he must be willing implicitly to follow orders; do not, because he does not go away for treatment, allow him to do any work at all for a considerable time; guard him from the officious interference of his relatives and friends; impress firmly upon him that it will take many months to get well and that the result rests entirely upon his own untiring efforts.

It is a hard task for a physician to tell a patient that he has consumption, yet it is his duty to do so and at once. Fortunately, the old pessimistic ideas concerning its incurability are now giving way to a more general optimism, which, if carried too far, may make the patient careless because he fails to recognize the danger he is in.

The writer knows how difficult it is to enlist the interest of the great body of physicians in treating faithfully this very chronic and to them uninteresting disease; if he succeeds in enrolling a few of those present in the ranks of the men who are working patiently for the welfare of such a large proportion of the community, he will feel that his small efforts have been fruitful of good, and he knows that the physician himself will be more than compensated by the knowledge that his future efforts will bring back health and happiness into the homes of many where gloom and despair formerly dwelt.

MEDICAL PROGRESS.

OBSTETRICS AND GYNECOLOGY.

Pathology and Treatment of Eclampsia.—Writing upon this interesting subject JOHN W. BYERS says (*Lancet*, September 9, 1905) the two views held at present as to the pathology of this disease are, (1) a number of disease entities are included under this term, each due to a different pathological lesion, and (2) eclampsia depends upon a poison, a toxin or series of toxins manufactured by the mother and fetus, and that the various changes found post mortem are caused by overaccumulation and non-elimination of these toxins. The toxemia view is the popular one at present, though it must be admitted that scientific proof of the existence of the specific causation is still wanting. By those seeking an explanation of eclampsia certain etiological points must be borne in mind. Why is eclampsia more common in primiparæ? Why is it more prevalent in certain districts? Why does it occur more frequently in certain years? And why does the death of the fetus lessen or abolish the prodromal symptoms? These points must be considered. The treatment is summarized as follows: Control the convulsions with sufficiently large doses of morphine subcutaneously rather than by chloroform inhalations. Keep the patient on her side, in order that fluid may not be inspirated, and allow no liquids. Eliminate the poison by purgation, hot packs and by saline infusion. If labor has not set in, treat the convulsions, but do not induce premature action of the uterus. If labor has begun and the patient is in the second stage, and the os dilated, give chloroform and deliver by forceps, if possible, or by version. If, however, morphine and purgation with saline injections have been tried and the patient is not improving, dilate the cervix and deliver. For convulsions after delivery use morphine, purgation and saline infusion. The best prophylactic measures are rest, milk diet, warm baths and purgatives.

Treatment of Eclampsia.—Eclampsia is now recognized as one of the toxemias of pregnancy. The toxins arise from one of three sources. They may be due to faulty maternal metabolism, to abnormal conditions at the placental site, or they may be produced during the development of the ovum and pass into the maternal economy through the placenta.

The fact that eclampsia is limited to pregnancy, and that emptying the uterus in many cases gives prompt relief would seem to show that the maternal metabolism is not the source of the toxemia. The source is not at the placental site for the marked change, seen in so many cases after the uterus has been emptied is too rapid. The conclusion is that eclampsia is due to the absorption of products of fetal metabolism in excess of the maternal eliminative powers or that under the influence of pregnancy the maternal economy lacks the proper power of excretion. The distinction between a hepatic and renal group of eclampsia is probably a difference of degree rather than kind. The effects of the toxins are those of an irritant poison acting on the nerve centers and on the tissues themselves. The great dangers are from failure of the circulatory mechanism, due to tremendous blood pressure changes, induced by the convulsions or to exhaustion dependent upon the extra work thrown on the heart by overaction of the vasomotor system, and from the rupture of a cerebral vessel during the convulsions. F. S. NEWELL (*Am. Jour. Obstet.*, September, 1905) states that the treatment of eclampsia must be devoted to a removal of the source of the toxemia, relief of the heart by stopping the convulsions and relaxing the vasomotor spasm, securing the elimination of the toxins and the proper support of the patient. The prophylaxis consists in good hygiene, necessary catharsis, plenty of water between meals and daily baths. The appearance of convulsions or failure to reduce pronounced toxemic symptoms calls for immediate radical treatment. To prevent further absorption the uterus should be emptied by the method which will give the least possible shock to the patient. The convulsions may be controlled by morphine and hyocine hydrobromate. Chloral occasionally acts well, but its absorption is slow. The use of chloroform or ether should be deprecated, but the administration of oxygen during the convulsion is strongly to be advised. The elimination of the toxins is best accomplished by the use of normal saline solution intravenously or subcutaneously. Nitroglycerin and hot packs may be of value; free stimulation should be used whenever necessary. After an eclamptic attack the patient should be kept quiet and on a fluid diet for several days.

Cæsarian Section.—J. D. VOORHEES (*Am. Jour. Obstet.*, August, 1905) has reported seven cases. From an exhaustive statistical review the writer shows that the fetal mortality is very high in all cases of operative delivery either by forceps or by version. The mortality is especially high in cases of contracted pelves. The statistics tend to show that Cæsarian section reduces the fetal mortality to a minimum, but is accompanied by a slight increase in the maternal mortality. The operation requires special training in surgical technic. The chief danger is infection; other dangers are hemorrhage, shock, embolism, intestinal adhesions, uteroabdominal fistula, hernia and rupture of the uterus in a subsequent pregnancy. In cases of extreme pelvic contraction, labor should be induced after the thirty-sixth or thirty-eighth week. If the attempt at delivery by the natural forces has failed, Cæsarian section should be resorted to. The writer condemns the employment of hysterectomy and oophorectomy as routine procedures to avoid subsequent pregnancy, in view of the favorable reports of repeated sections. Inasmuch as Cæsarian section is dangerous only when infection is present, and that there are too many fetal deaths from other major operations, and considering the low maternal mortality, the field for Cæsarean section should be broadened.

Staphlococcus Puerperal Pyemia.—Puerperal pyemia may be caused by the *Streptococcus pyogenes*, *Staphlococcus pyogenes albus* and *aureus*, pneumococcus, gonococcus, *Bacterium coli* and the septic vibrio of Pasteur. J. SCHWETZ (*Annal. de Gynécol. et d'Obstet.*, July, 1905) reports a case in which the staphlococcus was found in pure culture at autopsy. Eleven cases of this variety of infection have been recorded. While the streptococcus infections are in general more severe, the writer does not consider that a distinction between the staphlococci and streptococci pyemias can be made during life by the clinical symptoms. Bacteriological examination is of value in serum therapy as a means of directing the kind of serum to be used.

Etiology and Diagnosis of Early Tubal Pregnancy.—WILLIAM E. GROUND (*Am. Med.*, September 2, 1905) during the last 10 years has operated in 28 cases of tubal pregnancy. Of these, 21 were operated after rupture and 7 before rupture had occurred. All pre-rupture cases were abdominal section. Of the complicated cases 16 were suprapubic and 5 by the vagina. All the patients recovered. All had demonstrable lesions sufficient to account for the arrest of the fecundated ovum in the tube. The results of gonorrheal infection and minor postpuerperal lesions were most frequently noted as etiologic factors. Early diagnosis and prompt operation in all cases is necessary to reduce mortality and prevent morbidity. In the vast majority of cases a diagnosis can be made before rupture, when the mortality will be no higher than interval operations in appendicitis. In Dr. Ground's cases 85 per cent. had been seen by one or more physicians before rupture occurred.

Some Gynecologic Superstitions.—LUCY WAITE (*Am. Med.*, September 2, 1905) states that gynecology has been encumbered with numerous dogmatic theories which have been stated and restated so many times that they have been finally accepted by the profession without question and have become veritable superstitions. She takes up the questions especially of backache and constipation as symptoms supposed to be caused by retrodisplacements of the uterus and shows by statistics that both of these conditions are present in a large percentage of antipositions and absent in a fair percentage of retropositions. In 1,000 cases taken from her clinic at the Mary Thompson Hospital 44 per cent. of the patients with antiposition gave a history of backache and 41 per cent. of the patients with retrodeviation stated definitely that they did not suffer with backache. In 500 cases 52 per cent. of the patients with antiposition gave a history of constipation, and of the cases of retroposition 34 per cent. of the patients reported normal bowel movements. The question of childbearing as a remedy in dysmenorrhea is also discussed. Of 300 patients the question, "Have you more or less pain since the birth of your children?" 45 per cent. reported more pain, 30 per cent. less and 25 per cent. no difference. Dr. Waite believes that the practical application of the statistics relating to the clinical significance of retroposition of the uterus bears directly on the enormous amount of unnecessary operating which is being done under the false impression that the symptoms of which the patient complains are due to the position of the uterus and the complications which are in reality responsible for the symptoms are overlooked.

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ANNOUNCEMENT.

MESSRS. LEA BROTHERS & CO. take this opportunity of announcing that with the opening of the new year, the publication of the MEDICAL NEWS will be assumed by the A. R. Elliott Publishing Co., in conjunction with *The New York Medical Journal* and *The Philadelphia Medical Journal.*

In the arrangement of this transfer, both parties have been guided by the principal that a judicious consolidation promotes the interest of the medical profession, as well as of those who serve it. As a case in point, the contributors to the pages of the combined journal will gain a wider audience, their readers will be assured of improvements only rendered possible by such expansion, and advertisers will secure the advantage of wider publicity for their announcements.

THE BABES THAT ARE OUT OF THE WOODS.

So much has been said and so much more has been written, of late, in every language of the Universe, in regard to the alleged decrease in the population of the world that it is more than a matter of surprise that only one side of the predisposing cause seems to have been taken into consideration by the political economists of the various nations that have been interesting themselves in the subject.

Now, it is a self-evident fact that all things being even, a decrease in the number of births will cause a diminution of the sum total of the population, but it is also equally apparent that an increase in the death rate will also produce the same result, even if the number of births remain the same. In other words, it is only a question of proportion between the two, and this obvious but important fact seems to have been entirely overlooked, particularly by the continental writers on the subject.

Thus, France, who is having her annual attack of hysteria on the subject, has flooded her Chamber of Deputies with bills, looking solely to the means of increasing her birthrate. Alphonse is to be patted on the back and lured into the wiles of early matrimony by the promise of a bonus of "head money" for each and every addition to the list of more than welcome little strangers. Gaston is to be cajoled with the statement that married men are to be exempt from conscription and military service. Other bills provide that all governmental situations and municipal positions are to be closed to bachelors. In fact, there are bills for everything, and everything seems to be very much in its place, as there are more of them relating to this subject than there are deputies themselves. What will be accomplished, however, seems to be something of a gamble, for these gamesters do not, or will not, recognize the fact that they are drawing to a "straight" that is open at both ends, and that the little that will be saved at the bunghole will be more than wasted at the spigot.

For France is spending millions of francs annually on the erection and maintenance of insane asylums, while her jails and poorhouses all are now overcrowded by the very class of young men to whom she must look for her future increase of population. Meanwhile the children, who have been born, are left in dire poverty and neglect, and, according to their own statistics, the death-rate among infants has become simply appalling. All this, according to the same authority, seems to be due to the enormously increased manufacture and use of adulterated cordials and drug-laden appetizers. Some time since Deputy Valliant, during a parliamentary debate on the liquor laws, made a motion that the French Academy of Medicine should be asked to submit a list of the alcoholic drinks containing essences

dangerous to the public health, that their manufacture might be forbidden and their sale in the cafés prohibited. As the minister in control, for financial considerations, failed to report the proposition, the Academy independently appointed a commission, under the chairmanship of M. Laborde, who sent the result of these examinations directly to the Chamber of Deputies.

As this report has been already published, it is not necessary to comment on it here, beyond the fact that it states that absinthe, which is perhaps the national drink, or beverage, of France, even in its best grades, contains most poisonous elements, while the other liqueurs, which are generally made from synthetic essences, are dangerous in the extreme. Even vermuth is no exception, and chartreuse contains thirteen substances which can produce serious results. Vulnary has fifteen, and anisette heads the list, with still more, while it also contains a quantity of hydrocyanic acid, which is unquestionably its legitimate spouse, while the others are mere co-respondents. "For so strong is this essence," says the report, "that a few inhalations from a bottle containing it produce grave symptoms of syncope, and a feeling of illness that lasts for several days." As the sale of these liqueurs adds a large revenue to the government, no steps have as yet been taken to suppress or regulate their manufacture, so that the increase of the rate of infant mortality is hardly apt to be neutralized by the benefits that are to be bestowed on the groom or the "dot" that is to be promised to the bride.

As to Germany, there seems to be little doubt but what the anxious Kaiser will always find an increasing Army to command, for their birth-rate seems like a fixed quantity, and no fault has even been found with the maternal instinct of Gretchen. Little things that are "made in Germany" are invariably, as a class, well nursed and cared for, and the hygienic surroundings of children are better perhaps than of any other nation on earth, our own included.

Not that the American child, when *once born*, is not well cared for, or that there is any necessity for "a strenuous executive to turn his attention," as Mrs. Matilda Childe Dorr stated at a meeting of the New York State Federation of Woman's Clubs, recently held at Binghamton, "from settling disputes in football and wars, to his other hobby: the destiny of women." But here Mrs. Dorr, perhaps unconsciously but certainly most epigrammatically, struck the key-note of the American situation when she said, "the only difference between the 'new woman' and the 'old woman' is that the 'old woman' worked for her board and the 'new woman' works for wages."

And this, perhaps, is true. The bachelor girl has now a steadily increasing field of occupation. She has her bachelor apartments, her tailor-made clothes, her independence, both financially and socially, and a freedom from entangling alliances. She has also a noted dislike to being coerced on the marriage question, and her views seem to have been frankly uttered, at this same meeting, by an exponent of her class who is reported as saying, "The American woman is not a brood-mare nor yet a patent incubator, and we object to President Roosevelt's well-known ideas about women and children."

SURGICAL RESEARCH LABORATORIES AND THE MEDICAL STUDENT.

THE need of a means to present to the medical student in a practical manner the difficult, intricate steps of certain surgical procedures has long been recognized. Yesterday, however, no university had felt justified in incurring the large expense of equipping and maintaining the extensive plant which such individual, technical, training calls for. To-day, laboratories of surgical technic and research have almost simultaneously sprung into life in most of the great Eastern medical centers.

Through the persistent efforts of Cushing, the trustees of Johns Hopkins Medical College were induced to erect a commodious and well-equipped three-story building forty by eighty feet in area to be devoted entirely to the practical teaching of surgery and physiology. The Columbia trustees have appropriated a liberal fund for the development of a Surgical Research Laboratory in a building already standing upon the grounds of the medical department. Harvard University has made far-seeing and far-reaching plans for the practical teaching of practical surgical problems in her magnificent new buildings of the Fenway.

What is the purport and significance of the rapid development of these new laboratories? What do they teach the student and how do they interdigitate with the existing system of didactic lectures, clinics and individual quizzing?

The system of laboratory instruction recently

adopted at the College of Physicians and Surgeons of Columbia University may profitably be studied.

The Surgical Research Laboratory was completed at the opening of the academic year. It consists of three good-sized rooms which are arranged as follows. Room "A" is the kennel. Here there are commodious and airy quarters for twenty-four animals. Room "B" contains a tier of six "recovery" cages where animals coming from under the influence of an anesthetic may be watched and made additionally comfortable. It is, in additon, used for storage and workshop. Room "C" is given over to research work and to the technical surgical training of sections from the third year class.

Following the suggestion of Cushing these sections are divided into: "operator, first and second assistant; anesthetist, censor and 'family physician.'" The censor exercises absolute power to enforce aseptic thoroughness; he "calls down" any member of the operating force for the slightest technical error. The family physician is the historian.

Eight two-hour sessions are held, during which time each man holds these positions at least once. While not actually operating, the men are taught to prepare catgut; to make and sterilize every kind of practical dressing needed at an operation; to mix and prepare as for operation all necessary hand, instrument, and injection solutions. The various technics taught are those used in the Syms operating room of Roosevelt Hospital. Any animals requiring surgical care are treated free. This ensures a constant variety of operative work and also offers material for pathological study.

The course at present is a voluntary one, but the fact that half the class, representing almost the entire academic element, have elected it is sufficient and striking evidence of the estimate in which this training is held by the more thoughtful undergraduates.

This answers the question as to the rapid development of these new surgical technical laboratories. The cry was from the students. They could not learn technic from didactic lectures—from clinics or even from the invaluable and far-reaching quiz system. Indeed, the undergraduates at Columbia felt the difficulty of mastering technic to be so insuperable that they addressed a memorial to the president of the university beseeching him to grant them more complete surgical teaching than was at that time offered.

What do such laboratories teach the student? From one of the master surgical minds of the world, Maurice H. Richardson, we read in the *Journal of the American Medical Association* an article entitled "Surgical Responsibilities," what he considers essential in the training of a surgeon. "The importance of laboratory work—the so-called research work—in preparing a man to become a surgeon is great." "The student should be thoroughly trained in mechanical work; he should learn the use of tools of all kinds—machinists', carpenters' and forging. Mechanical skill alone, however, is of little value in the equipment of the surgeon without those finer mental qualities which enable him to make, from intelligent observation, accurate decisions."

Since it is not unlikely, as suggested by Richardson, that the time is near at hand when the practice of surgery shall be limited to those men specially trained and peculiarly qualified for its execution, must it not be looked upon as fortunate that the Surgical Technical Laboratory has come into being? Here, upon unconscious animals rather than upon the unfortunate but nevertheless sentient pauper population of our great hospitals, will an early decision be reached whether or not this or that student is qualified to take up the extremely difficult and exacting preparation for the career of a surgeon. For, at no distant time, must, by the very marvelous development of the art, this training, even in the medical school, be increasingly divergent and more arduous than that of the physican.

ECHOES AND NEWS.

NEW YORK.

Montefiore Home Report.—At the twenty-first annual meeting of the Montefiore Home President Jacob H. Schiff announced that the home gives treatment to 859 patients, of whom but 24 pay. The income from all classes of membership was $92,179.60, against an expenditure of $129,993.36, leaving a deficit of $37,813.76. The home received from the Saturday and Sunday Hospital Association $7,600, the largest award made to any institution in the association. This is because the Montefiore Home furnishes a larger amount of free treatment than any hospital in the city. The average per capita patient's cost, covering every expense, except permanent additions to property, was $289.60, as against $283.98 the preceding year, while the food account shows an average of 18.54 cents per diem. Addresses were delivered at the meeting by Isaac Wallach, president of Mount Sinai Hospital, and Isidor Straus, president of the Educational Alliance.

The following were elected directors to serve for three years: Ernest Ehrmann, Sol. R. Guggenheim, Sigmund M. Lehman, Joseph Moss, Jacob H. Schiff, and Fred. Sulzberger.

Dedication of the Philanthropin Hospital.—The Philanthropin Hospital, recently chartered by the State Board of Charities, was dedicated October 29. The temporary hospital building is located at the corner of Briggs Avenue and Maple Street, Williamsbridge, and the permanent hospital building will be in the immediate vicinity. The hospital was chartered last April to meet the growing requirements of this district. A dispensary service was established upon receipt of the charter, and its value was manifested this summer when *impetigo contagiosa* broke out in the Italian colony. Had this disease got a good start it would probably have spread all over the city, because of the handling of green vegetables by many of the people affected. The physicians of the Philanthropin worked vigorously at the contagion, and succeeded in overcoming it.

An Addition to St. Vincent's Hospital.—The seventh story addition to St. Vincent's Hospital, at Eleventh Street and Seventh Avenue, affording accommodation for 100 more patients than the institution has been able to receive, is now open. Archbishop Farley presided at the opening, and speeches were made by Dr. Frederick S. Dennis, John D. Crimmins and Father O'Flynn, of St. Joseph's Church. About 300 men and women, who have assisted the hospital financially, were present. In opening the proceedings, Archbishop Farley spoke of the great work of the Sisters of Charity in charge of the hospital, and referred to St. Vincent's as the greatest Catholic hospital in the country. Mr. Crimmins said that on January 1, 1896, the debt upon the hospital was $187,000, but that in the nine years intervening this had been paid off, and that three lots on which the addition had been erected had been purchased at a cost of $671,875. The present debt of the hospital, he said, was $225,000. Dr. Dennis said that the hospital now had 425 beds, as against 30 in 1849, and had treated 22,695 patients last year, 3,102 of whom were charity patients. A total of 700,000 had been treated in the last nine years.

The American Tuberculosis Exhibition.—The announcement is made from the Committee on Arrangements for the American Tuberculosis Exhibition to be held in New York, November 27 to December 9, that the American Museum of Natural History has joined hands with the National Association for the Study and Prevention of Tuberculosis and the Committee on Tuberculosis of the Charity Organization Society to make the exhibition a success. Recognizing the educational value of the plan and accepting this as a part of the function as a public institution, writes *Charities*, the authorities of the museum have placed at the disposal of the committee a large exhibition hall and are throwing themselves energetically into the work of making the exhibition a notable factor in forcing information regarding tuberculosis before the people. A cordial reception has been given to the scheme by all institutions and organizations that have been approached by the committee. The exhibition will attempt to show the facts regarding the disease and its distribution, and from this the problem to be met can easily be inferred. What is being done and what ought to be done will also be demonstrated. Exhibits of sanatoria, consisting of elaborate models, photographs and charts will come from points as widely separated as California and Nova Scotia, Ontario and Arizona. Large maps showing the relative prevalence of the disease in the different States of the Union are being prepared, and others giving similar information for the chief cities and occupations will also be exhibited. It is natural that New York City should make a strong showing not only by reason of the leading position which she has taken in the municipal fight against tuberculosis, but on account of the local interest in the exhibition. The Department of Health will be extensively represented by a demonstration of its well-known campaign. The Tenement House Department will also co-operate and is planning what promises to be one of the most interesting single features. Accurate copies of tenement-house rooms under both the old and newer conditions are to be prepared. Local public institutions and hospitals are also making elaborate preparations. Arrangements have been completed with the authorities of the tuberculosis exposition which is now being held in Paris by which selected material representing European work of particular value will be shipped to New York in time for use. In order to extend further the usefulness of the exhibition, the committee is planning a number of public meetings to be held during its progress, at which speakers of authority will bring out special points of interest. The Mayor and other city officials have been invited to be present at the opening of the exhibition, and everything points toward an enthusiastic co-operation on the part of those who are leading the fight against tuberculosis. It is recognized that the real value of an undertaking such as this depends entirely upon the publicity which attends it and the consequent public interest which can be aroused. It is hoped that the press will join with those behind the movement in emphasizing the importance of the problem and aid the organizations concerned in bringing every resident, not only of New York, but of the United States, to know at least the main facts regarding the disease and its danger, and the simple means of prevention.

The Work of the Rockefeller Institute.—The new building for the laboratory and offices of the Rockefeller Institute for Medical Research is rapidly nearing completion, and it is now hoped to have it opened for occupancy in December, or at the latest, early in January. Situated at the foot of East Sixty-sixth Street, on a high bluff overlooking the East River, it stands in a plot of twenty-six lots, on which are also an animal house and a power house. All the buildings are of gray brick, with limestone trimmings. Work on the structure was begun in July, 1904, on contracts aggregating about $320,000. The laboratory building faces Sixty-sixth Street, that street having been closed east of Avenue A by an act of the legislature after the site was acquired, as the plot extends to the river. This building measures 60 by 150 feet, and is five stories in height, with a basement. The first story contains the administration offices, library and assembly hall, while the second is planned to accommodate the physiological-chemical and pharmacological laboratories. Above the second floor the building is to be devoted to experimental pathology and bacteriology. The fifth story provides space for photo-microg-

raphy and general photography. In the artists' rooms are accommodations for an assistant who may need to pass the night at the laboratory, in order to follow experiments, and an undivided space for future developments. A somewhat novel feature of the second story will be a very large room, with a hard cement floor, containing all the machinery of the laboratory, such as presses, a centrifugal machine, distilling apparatus, etc. This is an adaptation from the Pasteur Institute, in Paris, the object being to have all the machinery under one man's eye. The entire roof will be covered by a house for small animals and birds, suitably partitioned and sheathed with copper. A covered way, of brick and limestone, connects the main building with the animal house on the grounds, which is 30 by 60 feet, and is two stories high. Various animals, from horses to rabbits and guinea-pigs, will be kept for biological purposes in the study of diseases or in preparing antidotes to them. The houses for them are built with attention to the comfort and hygienic maintenance of the animals. In the interior of the laboratory building the floors are of terrazo, or vari-colored gravel laid in cement, having a mosaic effect in light tint. The walls are finished in hard plaster, with oak trimmings, painted in different colors, according to the uses of the rooms. There are iron staircases and two elevators. It is claimed that the building is fireproof. The architects are Shepley, Rutan & Coolidge, of Boston, who were chosen because they had worked out the plans of the new Harvard Medical School buildings, which contain several laboratories of modern design.

Beginnings of the Institution.—The work of the Rockefeller Institute, founded by John D. Rockefeller, in 1901, has been conducted so quietly, no publicity having been sought for it outside the medical profession, that but few laymen have been aware of its nature or its importance. The institution is the first and only one of its kind in the United States. Somewhat similar in scope are the Pasteur Institute in Paris, the Institute for Infectious Diseases in Berlin, founded for Professor Koch, with other institutes in Germany of more or less consequence; the Imperial Institute in St. Petersburg, and the Lister Institute of Preventive Medicine, formerly the Jenner Institute, in London. Administration of the affairs of the Rockefeller Institute is vested in a board of seven directors, as follows: Dr. William H. Welch, of Baltimore, president; Dr. T. Mitchell Prudden, of New York, vice-president; Dr. L. Emmett Holt, of New York, secretary; Dr. Christian A. Herter, of New York, treasurer; Dr. Simon Flexner, of New York, director of laboratories; Dr. Hermann M. Biggs, of New York, and Dr. Theobald Smith, of Boston. These officers and directors have served from the beginning. One of the directors has said with reference to the work of the Institute: "It is commonly supposed by those whose attention has not been specially directed to the matter, that improvements in medicine are the results of chemical work and observation, carried on by physicians in the regular course of their practice. This is not the case. The great agency in advancing modern medicine to its present stage has been research work in laboratories. The general public has no conception of the wide-reaching effect which may be produced by a single discovery thus made. For instance, Koch's discovery of the tubercle bacillus, in showing that a single disease could be traced back to one specific cause, has given rise to our whole system of bacteriology. It was for the purpose of furnishing the opportunity for attacking some of the numberless unsolved problems in medicine that this institute was started. Mr. Rockefeller might have equipped it with a great amount of money at the beginning, and let the managers do the rest; but that is not his way of doing things. The Board of Directors of the Institute having been organized and incorporated in May, 1901, he gave to it the sum of $200,000, to be drawn upon as desired for ten years. To obtain immediate results, the board established, in the first year, some fifteen or twenty fellowships, yielding from $500 to $1,000 apiece, in various laboratories in this country, and also sent several to Europe, to pursue investigations there. Promising men were, of course, selected, who showed taste and aptitude for research work. At the end of the first year the board submitted a report to Mr. Rockefeller of what had been done, with the recommendation that the Institute should have a permanent central home, where all the investigators could get together and devote their time to research work entirely. It was unanimously concluded by the directors that the best place for such a center was New York City. Mr. Rockefeller approved the preliminary report and general scheme advocated, and then, in 1902, made an additional gift of $1,000,000 to carry on the work for ten years. Part of this sum was to be used for the purchase of real estate and the erection of a building suitable to the needs of the institution. We looked over the whole city for a desirable site. Finally Mr. Rockefeller bought the old Schermerhorn farm, extending from Sixty-fourth Street to Sixty-seventh Street, and from Avenue A to the East River, comprising about fifteen acres. The Institute then acquired from him the twenty-six city lots in that tract which constitute the present site, and at once began to form plans for building. Prof. Simon Flexner, of the Board of Directors, who was the head of the pathological laboratories in the University of Pennsylvania, was selected to be the head of the new laboratory to be erected. He passed the following year in Europe, looking over the laboratories there for ideas and suggestions. All the members of the Board of Directors except two have visited European institutions since this work has been in progress, in order to embody in this building the best methods of construction work to be found on the other side. On Dr. Flexner's return, in the fall of 1904, temporary quarters were rented for the Institute at Fiftieth Street and Lexington Avenue, being a part of the old buildings of the Nursery and Child's Hospital. These were fitted up, and have since been occupied as laboratories providing for investigations in experimental pathology, bacteriology and physiology, and in physiological and pathological chemistry. Appointments on the staff of the laboratories are made by the Board of Directors. Although it is believed that its principal work will be done here by its own staff, the Institute will continue, as it has done from the start, to aid important investigation work in other laboratories in this country and in Europe. We had a man from Boston in Manila studying smallpox, and we have had others at the University of San Francisco, in Boston, Philadelphia, Baltimore and various other cities where there are large laboratories. There are now fifteen or twenty men working under the auspices of the Institute outside of

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this city. The Board of Directors confers upon the recipients of its grants of money, designed to aid research in medical science, the title of 'Student,' 'Scholar' or 'Fellow' of the Rockefeller Institute, according to the character of the work on which the applicant is engaged and the results achieved. Since many of the recipients or grants are studying under acknowledged authorities in medical research, the titles are sometimes awarded upon the recommendations of the heads of laboratories in which the work is being done."

PHILADELPHIA.

The Philadelphia Obstretrical Society.—The meeting of this society was held November 2, 1905. The scientific program was opened by Dr. J. S. Randenbush, who read a paper on "Medicine and Means for the Control of Postpartum Hemorrhage." Dr. Wilmer Krusen read a paper on "Embolism Following Abdominal Section." Dr. Wm. R. Nicholson exhibited a new obstetrical case.

Bucks County Medical Society.—This society met at Doylestown November 2, 1905, and listened to an address by Dr. John B. Deaver. The following officers were elected: President, Dr. Richard C. Foulke, of New Hope, Pa.; vice-president, Dr. Howard Pursell, of Bristol, Pa.; secretary and treasurer, Dr. A. F. Meyers, of Blooming Glen, Pa.; committee on public policy and legisaltion, Drs. George M. Grim, Ottisville, A. F. Meyers, J. R. Richards, of Fallsington.

College of Physicians of Philadelphia.—The society held its regular meeting Wednesday, November 1, 1905. Dr. William S. Spiller and Dr. Charles H. Frazier read a paper and presented "A Case of Athetosis Treated by Nerve Transplantation." Nine months have elapsed since the operation. Dr. William J. Taylor reported a "Case of Hypernephroma." The patient recovered from the operation but died of an intercurrent disease. Dr. Alfred Gordon read a paper entitled "Auto-Suggestion in Hysteria Apropos of a Case, with Remarks on the So-Called 'Hysterical Insanities.'"

The Medicolegal Society of Philadelphia.—At the regular meeting of this society the following proposition was voted upon: "*Resolved*, That on and after the first day of January, 1906, no member of this society shall accept the position of club, society, lodge or organization physician, or agree, or continue to do, any medical or surgical work for any club, society, lodge or organization at a less rate than the regular or customary charges for like services rendeed by other physicians for patients not members of such club, society, lodge or organization. Also that in no case shall any physician agree to attend the families of the members of such club, society, lodge or organization at half price or a less price than the regular rate. Nothing in this resolution or section of the by-laws shall be construed as preventing any member from attending the worthy poor at a less rate or to give free service to those who are too poor to pay anything, or acting as city, county or town physician, health officer, or under any political appointments. Any violation of this law shall be considered unprofessional conduct and render the member guilty thereof liable to suspension or expulsion from this society, as the society may determine."

CHICAGO.

Gives $25,000 to Northwestern University.—At the annual meeting of the Board of Trustees of Northwestern College, held November 1, Dr. Albert Goldspohn donated $25,000 for the erection of a Science Hall. This secures another $25,000 pledged by Andrew Carnegie last spring for a college library building.

Harvey Medical School Under Ban.—According to a newspaper dispatch from Milwaukee, dated November 3, after an examination the State Board of Medical Examiners of Wisconsin declares the Harvey Medical College, of Chicago, is not a reputable institution, and that under the reciprocity system in vogue in Wisconsin it cannot recognize its diploma. This finding is embodied in the return of the Board to a judgment entered by Judge Williams in favor of Arthur Budan against the Board. Budan, a graduate of the school, tried to force the State Board to grant him a physician's license.

Investigation of the Pneumococcus.—Answering sundry requests from physicians as to date of publication of the results of Dr. Biehn's investigation of the pneumococcus, the substance of the report is here reprinted: "Rabbits injected intravenously with the sputum of a single healthy person fail to develop pneumonia; injections with the mixed sputa of two or more healthy individuals never fail to produce a typical pneumococcus infection. These results demonstrate, among other things, the wide diffusion of the pneumonia germs; they are present in the secretions of the mouth and throat of the vast majority of healthy individuals, usually lying dormant and inactive. Mixed with the germs of others they develop the disease. The practical point for prevention is the necessity of avoiding all unnecessary contact with a pneumonia patient, and the further necessity, on the part of other members of the family, nurses and attendants, for sterilizing their throats during the course of the disease.

Increase of Diphtheria.—The increase of this disease continues to be most marked in South Chicago, Kensington and Burnside. Of the 113 cases reported during the week, 33 were on the North Side, 52 on the South Side, and only 28 on the vast West Side. Of the 52 cases on the South Side, 24 are in the district south of Eighteenth Street, in the localities above specified. In the remainder of the city there are only four streets on which there are two cases reported. Nevertheless, the fact that sixteen deaths from the disease were reported during the week, only 8 during the previous week, and 10 during the corresponding week of last year, induces the Department of Health to repeat: There are too many unnecessary deaths from diphtheria in Chicago. The bulletin of the Department of Health states that there are two essentials for the successful treatment of diphtheria: First, prompt recognition of the nature of the disease; second, prompt administration of the remedy. The department is prepared and anxious to furnish both these essentials. On these points the Bulletin has repeatedly stated that investigations of deaths from diphtheria show that many of them were due to a deceptive type of the disease. Parents and even some physicians have been deceived when the most malignant form of the disease was present and death has ensued because the administration of antitoxin was thereby delayed. All persons having the care of children should keep in mind that the disease may be in the back part of the nose or in the wind pipe, as well as in the throat where the membrane can be seen. There may be little or no pain or fever, and on the second day the child may seem better. The poison of the disease often causes dulness and stupor. Hoarseness and difficult breathing in-

dicate diphtheria of the wind pipe. The true nature of the disease can only be learned by taking a culture, and when there are so many of these cases present as now, this should never be omitted. Antitoxin should be administered at once in every suspicious throat case; it can do no possible harm in any event; it will certainly prevent death from diphtheria if used within the first forty-eight hours.

CANADA.

A New Dentention Hospital for Quebec.—A modern immigration and dentention hospital to cost $60,000 is about to be erected by the Canadian Government, to replace the building destroyed by fire a short time ago. It will have accommodation for three or four hundred patients. The Government is also negotiating for adjoining property for the purpose of various hospital dependencies, including an isolation section.

Ontario Mortality Returns for September.—The returns to the Ontario Board of Health for September show that typhoid fever was somewhat more prevalent throughout the province than customary at that season of the year. The reports gave 278 cases with 45 deaths, while for the corresponding month of last year there were 182 cases with 66 deaths reported. Of the 233 deaths from different infectious diseases, consumption caused 153. Of smallpox there were 13 cases with 1 death, and of diphtheria 142 cases and 19 deaths.

British Medical Meeting in Toronto.—Arrangements in connection with the coming annual meeting of the British Medical Association to be held in Toronto from August 21 to 24, 1906, are going on rapidly. Dr. Alex. McPhedran, President of the Canadian Medical Association, has been appointed chairman of the local committee of arrangements. A strong finance committee has been selected with the Hon. Dr. R. A. Pyne as chairman. All the other committees have been arranged and every one is putting forth his best efforts to make the meeting a pronounced success.

Conference, Re Toronto General Hospital.—The Board of Trustees of the Toronto General Hospital will shortly meet in conference with representatives of the Ontario Government and representatives of Toronto University to discuss matters in connection with the proposed new General Hospital. At the present time the board is constituted of five members, three being appointees of the Ontario Government, one the Mayor of Toronto and one being elected by the subscribers. The present board have signified their willingness to retire and make way for a newer and larger board. The fund for the new hospital now reaches nearly $1,000,000.

Appointments to St. Boniface Hospital, Winnipeg.—St. Boniface Hospital, which heretofore has been an open hospital, has lately selected a staff from the physicians of Winnipeg as follows: Consulting physicians, Drs. O'Donnell, J. R. Jones and Wm. Rogers; consulting surgeons, Drs. England, McArthur and R. McKenzie; attending physicians, Drs. Lambert, Nichols, Chas. McKenzie and Peatman; attending surgeons, Drs. Todd, McKenty and Lehman; attending physicians, children's wards, Drs. Davidson, Dubuc and Slater; isolated hospital for infectious diseases, Drs. Devine, Halpenny, Teney, Gradner and Howden; oculist, Dr. Good; pathologists, Drs. Gordon Bell, McLean and Turnbull. Hon. Dr. O'Donnell was elected chairman of the staff and Dr. Jas. McKenty, secretary.

Typhoid Fever in Winnipeg.—So alarming has the epidemic of typhoid fever been in Winnipeg again this autumn that the Premier of the province requested the chairman of the Provincial Board of Health, Dr. R. M. Simpson, to make a special examination of the fever districts. His task was completed on October 17, and he found that since August 1 up to the former date there had been 596 cases in the city, with an average of 242 cases per month. More than one half of the cases were in the foreign quarter of the city. Dr. Simpson holds the presence of eight thousand box closets to be contributory to the prevalence of the disease. He further suggests that the city supervise the installing of sanitary systems in all houses, a visible water supply, Winnipeg's water being derived from artesian wells, and a health board of physicians, freed from all aldermanic influence.

Personals.—Dr. F. Montizambert, Director General of Public Health for the Dominion Government, is on his annual tour of inspection west and is at present in Victoria, B. C.—Dr. C. K. Clarke, superintendent of the Toronto Provincial Hospital for the Insane, on leaving Kingston, where he was superintendent of the Kingston Provincial Hospital, was tendered a banquet by the medical profession and other citizens of Kingston.—Dr. E. S. Turnbull, Branchton, Ont., has been appointed on the staff of the Protestant Provincial Hospital at Verdun, Quebec. Dr. Turnbull was graduated from McGill last year.—Dr. Claude Freeman, formerly medical superintendent of the Hamilton, Ont., City Hospital, sailed from San Francisco on November 4 for Chung-King, China, where he has received an appointment to the hospital of that city.—Dr. George W. Ross, Toronto, son of the former Premier of Ontario, the Hon. G. W. Ross, has been appointed pathologist and registrar to the Victoria Park Hospital, London, England.—Dr. J. M. Lenney, Winnipeg, has been appointed divisional surgeon to the Grand Trunk Pacific at that city.

GENERAL.

Antivivisection Again.—A petition is being circulated in Massachusetts relative to a bill to be introduced in the legislature of that State this coming winter, prohibiting briefly and simply "all experiments under any circumstances and for any purpose whatsoever upon dogs and cats."

Complaint Against Cuba.—Senator Cullom, of Illinois, chairman of the Committee on Foreign Relations, called on President Roosevelt Monday morning to lodge a complaint against the Cuban Government. The complaint is made on the score that the Cubans have not kept their agreement under the Platt amendment regarding measures of good sanitation. As a result of neglect, the Senator says, an epidemic of yellow fever is threatened, although the scourge has been kept off for several years through the rigid system of sanitation introduced and maintained during the American régime. Mr. Cullom said Monday morning that he thought the United States Government should protest under the terms of the Platt amendment. Not a single sewer, he declared, has been built since Havana was turned over to the Cuban authorities, and filth is gradually accumulating throughout the city.

Hospital Interne Wanted for Panama.—The United States Civil Service Commission announces an examination on November 29 to 30, 1905, at the places mentioned in the accompanying list, to secure eligibles from which to make certification to fill vacancies in the position of hospital interne under the Isthmian Canal Commission on the Isthmus of Panama. Two days will be required for this examination. As an insufficient number of eligibles resulted from the examination held on January 18 for this position, qualified persons are urged to enter this examination. Applicants should at

once apply either to the United States Civil Service Commission, Washington, D. C., or to the secretary of the board of examiners at any place mentioned in an accompanying list, for application Form 1312. The medical certificate in Form 1312 must be filled in by a reputable practising physician. No application will be accepted unless properly executed and filed with the Commission at Washington. In applying for this examination the exact title as given at the head of this announcement should be used in the application, namely, "Hospital interne (male). Examination for Panama Canal. November 29 to 30, 1905."

A Clean Milk Movement in Los Angeles.—The Board of Health of Los Angeles, Cal., and the city health officer recently inaugurated a crusade for pure milk. The members of the board, through personal visitation of dairies within and outside the city limits, acquired a first-hand knowledge of the situation that enabled them to effectively squelch the offending dairymen and their political backers in an attempt put forward to have the requirements and penalties laid down by the board set aside. From a number of analyses by the city bacteriologist, the board has decided that a dairy selling milk containing more than 500,000 colonies of bacteria to the cubic centimeter shall be the subject of investigation—surely, by the widest stretching of official amiability, no unreasonable standard. The situation is reviewed by the California *Medical and Surgical Reporter* in a recent issue, as follows: There can be little doubt but that a large proportion of the vast number of digestive diseases among infants, with the many fatalities therefrom, can be traced to an impure milk supply. This being the case, it certainly becomes the duty of the municipality to safeguard the lives of the children of the citizens. The Board of Health and the health department officials deserve the hearty cooperation of all citizens in this much needed work. Medical men, knowing the potent influence of an impure milk supply in inducing disease among infants, are especially obligated to lend the health officials of Los Angeles their cordial cooperation and aid. Another problem, by the way, to which the Los Angeles Company Medical Association might give some attention.

The "Patent Medicine" Crusade.—The *Evening Post*, under this editorial heading, says, in part: "In order to reduce the 'patent' proprietary medicine business to its legitimate field, it is necessary to accomplish only two things: First, the public must be made to understand what these 'remedies' are in themselves, and, second, legislators and well-meaning citizens generally must be brought to realize that the 'demonstrations of popular sentiment' in favor of these nostrums are purely fictitious, being inspired solely by the manufacturers themselves and those who profit by the sales. The past year—the most harassing, perhaps, that the proprietors of the celebrated cure-alls have ever passed through—has seen so much accomplished by educational work along both of these lines that one might almost declare the whole face of the question to be changed. Official agencies have been more than usually active, too, in the past year. The Commissioner of Internal Revenue's recent ruling, requiring the payment of a retail liquor dealer's tax for the sale of the highly alcoholic preparations, is important, as also the action of the Postoffice Department in withholding the use of the mails from actually fraudulent medicine concerns. Finally, one State has at last enacted the law requiring the publication of formulæ on all packages or bottles of proprietray remedies. This law, which ought to be in force throughout the country, has thus far been fought sucessfully by the 'patent-medicine' interests everywhere except in North Dakota, which State is now entitled to head a roll of honor. As to the means by which an apparent expression of public sentiment is secured adverse to these salutary statutes, the article on 'The Patent Medicine Conspiracy,' in the current issue of *Collier's*, presents a greater amount of detailed information than has ever before been brought together. The writer of the article referred to shows facsimilies of the advertising contracts of various leading companies. This is one clause found in substance in the advertising contracts of all the leading companies: 'It is mutually agreed that this contract is void, if any law is enacted by your State restricting or prohibiting the manufacture or sale of proprietary medicines.' And the second is like unto it: 'It is agreed that the Munyon's H. H. Remedy Co. may cancel this contract pro rata in case advertisements are published in this paper in which their products are offered with a view to substitution or other harmful motive; also, in case any matter otherwise detrimental to the Munyon's H. H. Remedy Co.'s interests is permitted to appear in the reading columns or elsewhere in this paper.' These are brief clauses, but they are potent and need no comment."

OBITUARY.

Dr. FREDERICK TEMPLETON ZABRISKIE died in the apartments of his father, Simeon T. Zabriskie, on West Forty-sixth Street, New York. He was born in Hackensack, N. J., thirty-four years ago, and after being graduated from Columbia College entered the College of Physicians and Surgeons. He was later connected with St. Luke's Hospital, the Post-Graduate, and the Polyclinic Hospitals, and was on the staff of the House of Mercy, of Pittsfield, in which he became interested through his connection with the Lenox colony.

SOCIETY PROCEEDINGS.

NEW YORK STATE MEDICAL ASSOCIATION.

Twenty-second Annual Meeting, held at the Academy of Medicine, New York City, October 16, 17, 18 and 19, 1905.

The President, J. Riddle Goffe, M.D., in the Chair.

THIRD DAY—OCTOBER 18TH (*Continued*).

(Continued from Page 911.)

Cancer and Parasites.—Dr. Gaylord said that if cancer is communicable, why should it not be parasitic in origin? If it is conveyed through the air or clings to houses, is it the epithelian cells that are thus carried? With regard to the X-rays, in animals cured by this means no unusual immunity is produced. With regard to Orth's supposed opposition to the parasitic theory, Dr. Gaylord considers himself in a position to say definitely that Orth's only desire is to insist that as yet there is not proof enough. His leanings, however, are rather toward a parasitic than non-parasitic origin of cancer. It is evident from many observations that it is not the epithelial cells themselves that overgrow, but that there is some other factor causing the overgrowth. This unknown factor must be considered as the problem of most interest, and there is no doubt that many recent observations upon animals point even more clearly than before to the parasitic nature of this mysterious agent.

Coincidence Not Conveyance.—Dr. James J. Walsh said that cancer is too common and the cases of supposed communication entirely too infrequent to argue the communicability of cancer. According

to the last census, nearly one in thirty of all the deaths in this country took place from cancer in 1900. This gives too large a range of possible coincidence to think of communication. Cancer would be even more frequent if it were communicable. With regard to a certain set of cancer cases, Dr. Walsh's personal experience is against possible communication. Nathaniel Hawthorne's daughter has, for some seven years now, with a little group of women, been taking care of the cancer poor of New York City. In seven years nearly 400 incurable cases have been kept until their deaths. No cases are taken that can pay. In order that these poor people shall not feel that they produce any sense of repulsion, this little group of women takes more intimate care of them, under their religious feelings, than would probably otherwise be the case. Here are multiple opportunities, therefore, for cancer contagion of the kind that have been mentioned as supporting the opposite thesis, the sort of association that only would occur among near relatives, and yet no cancer communication has taken place.

Communicability of Tuberculosis and Cancer.—Dr. Lloyd said, in closing the discussion, that to declare against cancer communicability is to harbor many evil ideas and consider that no progress in medicine can be made. Because cancer was not thought communicable, therefore it will not be found to be so. It must not be forgotten that this same notion prevailed with regard to tuberculosis before our present knowledge. With regard to parasites in cancer, Dr. Lloyd prefers to straddle the question because it is not as yet definitely decided. As for radium, some good results have been reported, but nothing definite can be said, and the matter is *sub judice*.

Mediastinal Cancer.—Dr. William Francis Campbell, of Brooklyn, said that in April, 1905, there was referred to him for operation a farmer, twenty-one years old, with a diagnosis of goiter. He gave the following history: Always enjoyed good health; no previous illness till two months ago when the first symptoms noticed were hoarseness and loss of voice. This continued till one month later when a swelling appeared in the region of the thyroid. His breathing became troublesome; he could not sleep lying down; his appetite was very poor, and it hurt him to swallow. This was the statement of the case from the patient's standpoint, presenting a sequence of symptoms as follows: Loss of voice, swelling just above sternal notch, embarrassment of respiration and difficult deglutition. The point of interest is the sequence of the symptoms. The first symptom was loss of voice; this led to doubt of the previous diagnosis, for in goiter loss of voice is a late symptom, not an early one; in goiter the appearance of the tumor is first and loss of voice secondary; here the loss of voice was first, and the appearance of the tumor secondary. Convinced that the explanation of these symptoms would be found elsewhere than in the thyroid, a more extended examination gave the following findings: The patient presented a good muscular frame, skin pale, breathing labored, voice hoarse, lips slightly cyanotic, right pupil dilated, left normal, both react to light, sclera pale, Mouth, pharynx and spine negative. Projecting above the suprasternal notch is a tumor half the size of a lemon, lying between the two sternomastoid muscles and in front of the thyroid cartilage, pushing the larynx and hyoid bone upward and backward, evidently not attached to the larynx or involving the thyroid gland. It is moderately firm on pressure, non-pulsating, gives no thrill or murmur, and no tracheal tug on elevation of the larynx. The cervical and submaxillary glands on the right side are not enlarged, but the glands in the left lower cervical region are enlarged to the size of a small almond. The tumor is dull on percussion; this dulness is continuous, more marked over the first piece of the sternum, and is continuous with heart dulness, but this appears to be more marked in the upper half of the cardiac area. There is no pulsation, thrill or murmur over the first piece of the sternum. The left border of the heart percusses one-half inch to the right of the nipple line. The sounds at the apex are moderately distinct; no murmurs are heard at this point. There is marked dulness in the right of the sternum in the second space for two inches; this continues down as far as the fifth space where it becomes continuous with liver dulness. Over the upper half of the heart the sounds are very faint, and no murmurs are heard. Both radial pulses are synchronous, but the left is a little smaller than the right; over both lungs the breathing is feeble, inspiration is shallow and quick. Loud bronchial sounds are transmitted through the lungs.

Symptoms and Fatal Tissue.—Paroxysms of coughing occur every few minutes, and with each effort one or two ounces of mucopurulent material is ejected. On the second night after entering the hospital he was sitting, as usual, by the open window. This was his most comfortable method of resting. He arose to get something; after walking several steps fell and expired. Autopsy showed a tumor of the mediastinum, involving the pericardium and extending into the sac. It extended backward and upward into the neck, and was about the size of the head of a seven months fetus. Pathologist reported it a lymphosarcoma.

Medical and Social Mission of the Tuberculosis Sanitarium.—Dr. S. A. Knopf dwelt especially on the education in medical prophylaxis and the social advantages of sanatoria for tuberculous patients. The regular life constitutes an excellent discipline. The insistence that alcohol is not good for tuberculosis reduces the tendency to alcoholism, which sometimes develops among these cases and lessens the excuses for taking it. Association, properly regulated, constitutes an education in good manners. At many foreign sanatoria the university teacher comes to lecture before the patients once or more during the week. At Trudeau's sanatorium the *Journal of Outdoor Life* is published, and a botany club has come into existence, both of which give intellectual occupation to patients and save the tedium of the time. In German sanatoria singing lessons are given, and singing in the open air is most helpful. Besides, there is an excellent medical training in sanatoria for physicians and nurses. When the time comes that tuberculosis shall be so lessened that so many sanatoria will not be needed they will make excellent homes for the aged, who will be more numerous because they will have been saved from tuberculosis.

The Radical Removal of Cancer of the Stomach.—A paper by William J. Mayo, A.M., M.D., and Charles H. Mayo, A.M., M.D., Surgeons to St. Mary's Hospital, Rochester, Minn., was read by Dr. William J. Mayo, the President of the American Medical Association.

Curability.—There is no truthfully recorded example of a cancer of the stomach cured by medical means, yet these cases are treated by medical men,

are sent into the medical wards and subjected to treatment which must result in 100 per cent. mortality. Cancer of the stomach is the most frequent form found in the human body, at least 30 per cent. of the total, a tremendous sacrifice of human life almost without effort at cure. The past high mortality of radical excision and the difficulty of early diagnosis are largely to blame for this state of affairs. Since 1900 great improvement in technic has lowered the mortality to less than 10 per cent., and exploratory incision in the suspicious cases gives the diagnosis.

Report of 81 Gastric Resections, with Mortality of 14½ per cent., including Early Operations.—Thirty-four patients operated upon in the last thirty months with a mortality of 8 per cent., 25 consecutive with 1 death, 4 per cent. As to relief, 11 operated upon too recently to be of value as to cure. Five failed to live six months, 38 lived six months to a year, and 24 are alive now; 21 from one to two years, and 13 are alive at the present time. Ten of these have lived from two to three years, 4 from three to four years and 3 alive longer; as only 16 were operated upon more than three years ago, this gives 25 per cent. living three years or more. One is alive and well four years and ten months after the operation.

Clinical History and Symptoms of Most Value in Early Diagnosis.—Traces of blood and reduction of hydrochloric acid of some importance. History of past ulcer is not against later diagnosis of cancer, as ulcer often degenerates into cancer. Twenty-five per cent. of our last 24 cases show this. The presence of a tumor is not necessarily a contra-indication to operation. A small movable growth in the pyloric end is a rather favorable type, as it gives early obstruction. Seventy per cent. are in the operable (pyloric) end of the stomach. All well known means of diagnosis merely give rise to a suspicion, and if we cannot disprove it, exploratory incision is called for.

Early Operations for Cancer of the Stomach.—Dr. John B. Deaver, of Philadelphia, who opened the discussion on Dr. Mayo's paper, said that if more internists saw operations upon cancer they would advise operation sooner than they do. The ordinary methods of diagnosis are not especially effective or certain for early diagnosis, though the absence of hyperleucocytosis after digestion and the presence of lactic acid are helpful. Careful examination of the vomitus may be pathognomonic. Indigestion is not always a surgical disease; neither is it always a medical disease. Persistent symptoms from the gastro-intestinal tract mean serious involvement of the gall-bladder, the pancreas and the stomach, in nearly every case. It is important then for the physician to insist on consultation with the surgeon, if the symptoms persist after careful treatment for some time.

Difficulty of Early Diagnosis.—Dr. Willy Meyer, of New York, said that waiting for the tumor to make its appearance in gastric cancer is as bad as waiting for the tumor in appendicitis. The waiting is too long. An exploratory incision should be made early in doubtful cases. The scales are an extremely important diagnostic help, and any serious decrease in weight should be looked to. Dr. Meyer has done five gastrectomies with four recoveries, the fifth case being in a man of very poor health because of complicating specific disease. Two of the patients are alive after two years. Posterior carcinoma of the stomach often induces the surgeon to wait too long. Even an anesthetic may not enable him to palpate these. An anesthetic should always be used in doubtful cases.

Radical Operation.—Dr. Mayo, on closing the discussion, said that the glands likely to be affected by stomach cancer are as well known and as definitely located as those of the breast. In most cases they could be removed without danger. His method is to do gastrectomy by tying first the gastric artery and the superior pyloric on the upper curvature. He then goes in behind from above, and avoids the danger of injuring of the ileocolic artery, injury to which may result in gangrene of the transverse colon. If the operation is done with care, the immediate danger is very little, and the results remarkable.

Cancer of Intestinal Tract.—Dr. James P. Tuttle, of New York, said that cancer of the alimentary tract represents over 50 per cent. of all cancer. It used to be considered as most likely to develop in middle life and seldom under forty years. Now it is known to occur much earlier at times, and Dr. Tuttle saw a cancer of the rectum not long since in a new-born child. Often in these cases there is a little temperature and some tension of the rectus muscle, and while the surgeon is waiting for complete quiescence to do an interval operation, the cancer progresses too far for successful removal. Of the cancer of the lower intestinal tract the most important sign is unsatisfied movements of the bowels. There is a sensation of unfinished business. Sometimes this symptom alone is sufficient to lead to investigation which discloses the cancer. Chronic constipation should not be treated for a considerable period, especially if it proves obstinate, without suspicion of cancer and careful investigation along that line. In cancer of the intestines, where the new growth cannot be removed, the fetal current may be switched round the obstructions without the necessity for the inconvenience of an artificial anus. In inoperable cancer of the rectum, curettage followed by the cautery gives comfort and prolongs the patient's life.

High Intestinal Cancer More Dangerous.—In the discussion Dr. Arpad G. Gerster said that as to metastases cancer of the intestine is worse the higher up it is. Rectal cancer shares with cancers of the lip the property of not being very malignant. Unfortunately, the symptoms are often very late. The incomplete healing of evacuation is an extremely important diagnostic sign. For the discovery of many cancers of the intestine, anesthesia after thorough purgation is the only diagnostic sign short of exploratory laparotomy. At times the malignant stricture is only microscopic, and there would be difficulty in finding it even at the autopsy table.

Thyroids Combined with X-rays.—Dr. Carl am Ende presented a patient who had been treated for cancer by the administration of thyroids combined with X-rays, in whom an excellent result had been obtained.

Cancer of the Uterus.—In the absence of Dr. George M. Johnston, of Richmond, Va., Dr. Charles P. Noble, of Philadelphia, read a paper on "Cancer of the Uterus." He called attention to the fact that even on the five-year basis Dr. Byrne, of Brooklyn, had succeeded in saving 19 per cent. of his patients by amputation of the cervix and burning out of the malignant material. The radical method, so much advocated in Germany for a while, of removing not

only the uterus, but considerable tissue alongside it and all the glands involved as far as possible, did not give good results and is not worth considering as a routine treatment. In one-half of the cases the lower glands are involved, but many of them could not be removed, because of their position along arteries.

The attempts to eradicate all cancer tissue are discredited by accidents to ureter and bladder, which will occur. The best method seems to be the use of the cautery after the fashion of Dr. Byrne, of Brooklyn.

Education and the Recognition of Cancer.—Dr. Frederick, of Buffalo, said that for better results what is most needed now is that the general practitioner shall be educated up to realizing the presence of cancer early and referring it to the surgeon. Vaginal hysterectomy with cautery in clamps, the ureters being pushed well out of the way, or, if involved, being resected and transplanted, will give the best general results. There are more patients living after this operation than when a total hysterectomy has been done.

Dr. Vineberg said that cauterization does not leave open lymphatics and so prevents recurrence to a great degree. He agrees in discarding the radical operation because the mortality is too high and the results too uncertain.

Dr. Noble, in closing the discussion, said that in advanced cases the radical operation should be attempted. The use of the cautery will sometimes give wonderful results.

Cancer of the Larynx.—Dr. John A. MacKenzie, of Baltimore, Md., said that it is a mistake to group together all cancers of the larynx as if they were equally malignant. There are histological distinctions which can be made and which enable the operator to decide as to the extent of operation needed. It is curious that many still prefer to operate through the mouth, for it is easier to remove the cancer completely by an external incision. The rule must be to do as radical an operation as seems needed, and the tendency is rather to cut too little than too much. As Dr. Gross said eloquently, though a little vulgarly, perhaps, "Cut out the very atmosphere of the damned thing."

Failure of Interlaryngeal Treatment.—Dr. Delevan, of New York, said that interlaryngeal treatment had failed. As soon then as by microscopic examination the tumor was found to be malignant, it should be removed very thoroughly. There is choice between partial and complete extirpation of the larynx, but where the new growth is close to the median line, the more radical the operation the better will be the results.

Dr. Myles said that unfortunately the diagnosis of laryngeal cancer is not made early enough. Every case of chronic hoarseness of patients of middle life should be followed up. Dr. Myles prefers the external operation. Sometimes the cases are not so hopeless as they look. Dr. Myles related one case in which, because of the danger of radical removal of the larynx, operation was refused, and after a palliative operation the patient got well and stayed well, through the microscopic diagnosis of the removed tissue was carcinoma.

Dr. MacKenzie said that more special study is needed, in order to determine the varying degrees of cancer of the larynx and its methods of diffusion.

It is of particular interest to study more in detail the lymphatic paths that render diffusion possible.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-first Annual Meeting, held at Indianapolis, Ind., October 10, 11 and 12, 1905.

(Continued from Page 865.)

General Blood Poisoning Emanating from the Nose and Pharynx.—Dr. J. Holinger, of Chicago, stated that micro-organisms of the nose and pharynx were formerly considered harmless. A great many diseases could be directly traced to them. Fatal cases of blood poisoning occurred, but were not very frequent. This statement in the paper was substantiated by the histories of two cases. The speaker said that Dr. Schwarzenbach had shown that a number of general diseases, such as acute and chronic articular and muscular rheumatism, sciatica, etc., could be traced directly to general infection from the pharynx with streptococci. He proved this statement by showing that with the decrease in the number of streptococci in the pharynx all general symptoms diminished and disappeared. He had the advantage of practising in the mountains, where these infections were only sporadic and epidemic. In the city these were constant, general and endemic. The connection between acute rheumatism and tonsillitis was well known. The tonsil received its lymph from the nose and pharynx, and might therefore become secondarily inflamed in cases of infections located in the nose and pharynx. There was a difference in the course of the disease, whether the infection dated from the nose and pharynx or directly from the tonsils. The most striking example was diphtheria. All knew the seriousness of diphtheria starting from the tonsils and the lymphatics of the nasopharynx, while diphtheria of the nasal mucous membrane was a rare but comparatively innocent disease. Histories of cases were given by the author where chronic rheumatism of many years' standing which had been treated with all kinds of medicine, massage and X-ray, disappeared when the suppurative processes in the nose and its sinuses were cured. The mixed inefctions of tuberculosis of the lungs and bones might be avoided, in the opinion of the author, if the pharynx and nose whence they started were treated. The treatment was simple. Very little was accomplished by sprays. Washes with boric acid solution were used in the nose, and in the pharynx paintings with solutions of iodine in iodide of potash and glycerine. Difficulties were often experienced in locating a suppuration of the nose or naso-pharynx; then the experience and skill of the specialist came to the rescue.

Cancer of the Rectum.—Dr. E. B. Smith, of Detroit, Mich., pointed out the radical operations required in cancer of the uterus and cancer of the breast, saying that to the practical working surgeon when operating it mattered not so much as to whether the cancer was due to a parasite or to a tissue fault, as it did to feel and to know that all tissue involved was being extirpated. The modern treatment for cancer consisted of the following: Internal medication of arsenic; X-ray; local application of arsenic and zinc; Coley's fluid—the mixed toxins of the streptococcus of erysipelas, and the *Bacillus prodigiosus;* resection of nerves at the site of malignant neoplasms; ligation of blood vessels supplying blood to the parts, and extirpation. The author made a special plea for extirpation in the treatment of cancer of the rectum as being the only procedure that would give hope of a cure. He

touched on colotomy as the operation of necessity rather than the operation of choice, and urged an examination in all cases where the rectum was involved, as in cases of hemorrhoids, where there were bloody stools, where there was painful defecation, and where there was constipation, and advised a microscopical examination in all cases where the neoplasm was developed. The author showed that the extirpation of a part or the whole of the rectum by the Kraske method was the ideal operation, and should be practised only by those who have had experience in capital operations.

The Surgical Management of Injuries of Peritoneal Viscera Resulting from Violence Applied to the Abdominal Wall.—Dr. John Young Brown, of St. Louis, Mo., called attention to the dismal mortality in such cases, and emphasized the importance of their early diagnosis and prompt surgical treatment. He reported a series of six cases which had come under his personal care during the past eighteen months, in all of which abdominal resection was done. Of the six cases, one recovered and five died. An analysis of the cases led to one conclusion, namely, the importance of early diagnosis and prompt surgical treatment by abdominal section in all cases of abdominal contusion, in which there were present the slightest symptoms pertaining to injury to peritoneal viscera. If one waited until the classical symptoms of peritonitis were present surgery promised little.

Intraperitoneal Tuberculosis.—Dr. F. F. Lawrence, of Columbus, Ohio, read a paper on this subject, in which he drew the following conclusions: (1) Intraperitoneal tuberculosis is frequently a local disease. (2) It probably occurs much more frequently in the female than in the male. (3) In a large majority of cases it is primarily visceral, and the general peritoneum is secondarily involved. (4) The surgical treatment is rational, sometimes agreeably surprising in results, and again bitterly disappointing. (5) In this, as in many other surgical conditions, early diagnosis and early operation will bring more certain results. (6) In this condition the greatest obstacle to overcome is the idea that it is a secondary condition. (7) No case of intraperitoneal tuberculosis should be denied the benefits of operation, no matter how extensive, so long as there is no positive pulmonary or pleuritic involvement, for the reason that some apparently hopeless cases fully recover. (8) When there is a tuberculous peritonitis, a sequel of tubercular tubes, ovaries or appendix, the primary focus should always be removed. (9) In these tuberculous cases the mesenteric glands have not been found frequently involved, and when they are operation accomplishes very little good. (10) In tubercle of tubes and ovaries the adhesions are usually firm, sometimes, though not usually, very vascular and not infrequently involve loops of the small intestine; hence the greatest care is necessary to avoid serious injury to bowel and at the same time separate completely all adherent surfaces and provide complete drainage. (11) Drainage is the great factor in recovery, when properly carried out.

Pyloroplasty with the McGraw Ligature.—Dr. J. Henry Carstens, of Detroit, Mich., said that many cases with disturbances of digestion could not be diagnosticated or relieved by medication. These should be subjected to an exploratory celiotomy. Gastro-enterologists should not treat patients for months and years if they could not make a positive diagnosis or cure the patient. After seasonable efforts the patient should be sent to the surgeon for relief. The McGraw ligature was a valuable means of relieving stricture at the pylorus and the resulting dilatation of the stomach. This method of operating was easy and quick; the danger was very small, and the operation was preferable to those heretofore used in benign contractions at the pylorus. It was a great deal better than gastroenterostomy, as one restored as nearly as possible the normal condition. Quite a number of gastroenterostomies had been reported, with a most gratifying result in some of the cases, but the difficulties encountered, the trouble with the vicious circle frequently called for a double operation. The McGraw elastic ligature method should be the operation of choice. Dr. Carstens concluded by saying that (1) many stomach troubles were due to mechanical means. (2) These cases could only be relieved by surgery. (3) Many cases could not be properly diagnosticated in the present state of our knowledge. (4) Obscure cases that had been subjected to various modes of treatment without benefit should receive the benefit of an exploratory celiotomy.

Ovarian Cystoma.—Dr. L. P. Luckett, of Terre Haute, Ind., reported a case of ovarian cystoma upon which he had operated. The tumor originated from the left ovary, was attached by a broad pedicle which was tied off in sections. The uterus and right ovary were found to be normal. The fluid and tumor were estimated to have weighed between seventy and eighty pounds. The patient made an excellent recovery.

Surgical Treatment of Nephritis.—Dr. Alexander Hugh Ferguson, of Chicago, presented a further report on the surgical treatment of this disease. He reported seven cases upon which he had operated, with two deaths:

Case I.—Capsulectomy and nephrotomy; return of symptoms; no second operation; still improved.

Case II.—Chronic nephritis and pregnancy; unilateral capsulectomy and nephrotomy, with recovery.

Case III.—Chronic painful left interstitial nephritis; capsulectomy and nephrotomy, followed by complete recovery.

Case IV.—Nephritis; unilateral capsulectomy and nephrotomy, with recovery.

Case V.—Nephritis; unilateral capsulectomy and nephrotomy; death.

Case VI.—Bilateral nephritis; bilateral capsulectomy; unilateral nephrotomy; multiple punctures on the other side; death.

Case VII.—Double recapsulectomy; multiple punctures; patient progressing toward recovery.

Dr. Maurice J. Rosenthal, of Fort Wayne, Ind., discussed the subject of closure of uretero- and vesicovaginal fistulæ, and reported a case. The author concluded by saying that a considerable area of the scar tissue and vaginal mucosa might be inverted into the bladder without producing ill effect. Ureteral fistula embedded in scar tissue might be inverted into the bladder and continue to discharge its urine without becoming stenosed. Even large vaginal fistulæ, where part of the bladder walls were lost in scar tissue from a previous hysterectomy, might be successfully operated by the operation of denudation and suture through the vagina without disturbing the relations of the bladder or any adhesions of pelvic viscera which might have formed in the scar.

Sprained Ankle.—Dr. Robert Carothers, of Cincinnati, Ohio, read a paper on this subject, in which he drew the following conclusions: (1) No one is exempt from a sprained ankle, although some are more prone to it than others. (2) That in severity a sprained ankle will range from a trivial accident to one of extreme severity and everlasting. (3) That the outer side more often than the inner side of the ankle is the seat of trouble. (4) That the diagnosis which is ordinarily made with ease is at times made with difficulty, and occasionally an X-ray examination is required to make the diagnosis certain. (5) That the treatment by immobilization with a plaster-of-Paris cast is unsatisfactory and at times injurious. (6) That the treatment instituted by Cotteral, the so-called adhesive plaster strappings, advising and urging the patient to walk on the injured foot, the early removal of these straps, followed by massage, gives the most satisfactory and best results. (7) That the old cases are to be under anesthesia, converted into acute sprains and treated in the same manner.

Appendicitis.—Dr. R. E. Haughton, of Richmond, Ind., followed with a paper on the history, differential diagnosis, pathology and etiology, medical and surgical treatment of this disease. He presented a brief history and plea for an abatement of the use of the knife in place of treatment by remedies, in view of the statistics and results.

Shall the Laity or the Profession be Responsible for the Death-Rate in Appendicitis?—Dr. J. C. O'Day, of Oil City, Pa., said that every physician when confronted with a case of appendicitis should frankly tell the patient the nature of his trouble; explain to him honestly and candidly the disposition of his disease; that no one could tell what an inflamed appendix would do, and that there was no safety till the offending organ had been removed. If the patient then decided to defer operation he, not the surgeon, should be responsible. If this were done he thought we would hear no more complaints of, Why did not the physician advise operation before it was too late?

Sarcoma of the Anterior Segment of the Globe.—Dr. O. Tydings, of Piqua, Ohio, presented a brief history of a patient upon whom he had operated for the removal of melano-sarcoma of the anterior segment of the globe. The diagnosis of melano-sarcoma was confirmed by others. Five days after the removal of the tumor the patient dropped out of sight and the speaker did not see him again until the following August. There was no recurrence; the cicatrix was smooth; the lone pigmented spot not larger than a pinpoint, which the author took to be the remains of an old hernia of the iris, was still present, but absolutely quiescent. The patient's vision, which, when he first saw him, was right eye, 20/40, and when operated 20/200; left 20/30, was now 20/20 in each eye. So far as the author had been able to examine authorities, the case stood alone. Primary melano-sarcoma of the cornea is rare. Nine cases had been reported of sarcoma of the cornea by different authorities. None of these cases, however, according to an English authority, was above suspicion.

Three Cases of Extraperitoneal Rupture of the Bladder Complicating Fracture of the Pelvis, with Recovery.—Dr. Joseph Rilus Eastman, of Indianapolis, said that injuries of the pelvic bones were attended with more or less risk to life, which did not ensue solely from the damage done to the bones themselves, but arose usually from the injuries done to the viscera of the region involved. Formerly death occurred in a large percentage of cases of rupture of the bladder. The mortality was naturally much higher in those cases in which a tear of the peritoneum made possible the entrance of urine into the peritoneal cavity. However, extravasation of urine through the pelvic connective tissue in cases of purely extraperitoneal bladder rupture also formerly caused a high mortality rate. This mortality rate had been decidedly decreased by modern methods of dealing with shock and free and rational bladder drainage. The immediate and characteristic symptoms of the injury were intense pain in the abdomen, collapse and great irritation of the urinary reflex, with ineffectual attempts to void urine. Inability to void the urine was usually present, whether the peritoneum was torn or not. If the peritoneum was injured peritonitis of the sthenic type developed duly. As the injury usually occurred while the bladder was full, an area of dulness and tenderness was to be found over the bladder, extending irregularly beyond the normal limitations of bladder dulness, and a large amount of bloody urine might usually be withdrawn by catheterization. As to the diagnosis of fracture of the pelvis itself, this could occasionally be made visually. Usually, however, the surgeon must depend upon his senses of sight, touch, and hearing for the well-known signs of fracture, deformity, abnormal mobility and crepitation. The deformity was usually not pronounced. In the three cases described by the author the treatment consisted in combating shock, chiefly with normal salt solution and adrenalin, in the removal of clot, suture of the rent in the bladder, appropriate bladder drainage, rest and the application of a bandage in such a manner as to prevent movement of the pieces of bone which were broken off. The following papers were also read: "Note on Bone Tuberculosis, with Report of a Case," by Dr. W. W. Vinnedge, Lafayette, Ind.; "Post-Operative Acute Dilatation of the Stomach, with Report of a Case Following Nephropexy," by Dr. A. E. Halstead, Chicago; "Treatment of Tuberculosis of the Cervical Lymphatics," by Dr. H. C. Sharp, Jeffersonville, Ind.; "Visceral Ptosis; Its Surgery," by Dr. Earl Harlan, Cincinnati, Ohio; "The After-Treatment of Gastroenterostomy," by Dr. Charles A. L. Reed, Cincinnati, Ohio; "Systs of the Mesentery, with Report of a Case," by Dr. L. G. Bowers, Dayton, Ohio; "Perforating Ulcers of the Duodenum, with Report of a Case," by Dr. M. A. Austin, Anderson, Ind.

The following preamble and resolution were unanimously adopted by the Section:

WHEREAS, The medical profession keenly realizes the great and increasing evil, moral, mental and physical, arising out of the support given by the public press to the so-called patent medicine interests, leading to the pernicious practices of self-drugging, narcotic habituation and alcoholic excess; be it

RESOLVED, That the Mississippi Valley Medical Association commends and frankly endorses the attitude adopted by *Collier's Weekly* and the *Ladies' Home Journal* in giving publicity in the articles by Samuel Hopkins Adams, Norman Hapgood and Edward Bok, respectively, to the truthful exposure of the nefarious practices and unscrupulous methods of the so-called patent-medicine concerns.

Officers.—The following officers were elected for the ensuing year: President, Dr. J. Henry Carstens, Detroit, Mich.; First Vice-President, Dr. Joseph

Rilus Eastman, Indianapolis, Ind.; Second Vice-President, Dr. H. H. Grant, Louisville, Ky.; Secretary, Dr. Henry Enos Tuley, Louisville, Ky., re-elected; Treasurer, Dr. S. C. Stanton, Chicago, re-elected.

Hot Springs, Arkansas, was selected as the place for holding the next annual meeting.

MEDICAL SECTION.

What Is the Present Conception of Bright's Disease?—Dr. G. W. McCaskey, of Fort Wayne, Ind., read a paper on this subject, in which he said that the only possible justification for the use of the term was an historical one, and while its meaning must, in a sense, change with the changing views of pathology, yet the primary groundwork, which constituted the historical basis on which it stood, should be kept constantly in view. He presented a brief inquiry as to the character of the group of morbid states and symptoms originally described by Bright. The investigations of Gull and Sutton, on the relation of arteriocapillary fibrosis as a cause of contracted kidney, were the most important steps in broadening the views entertained concerning Bright's disease. They demonstrated the systemic or hematogenous character of one clinical type of the disease, which naturally stimulated thought and investigation with reference to other types along the same line. In spite of the advances in pathological doctrine, in spite of the mutations of opinion and classification, one could not but be impressed by the close resemblance between the views entertained to-day and those of half a century ago concerning what might be called the gross features of Bright's disease. For the purpose of a broad general view of the subject, the author divided the causal conditions into six classes: (1) The acute infections; (2) chronic infections; (3) chemical poisons introduced into the circulation, of which lead may be taken as a type; (4) the influence of cold; (5) the products of perverted gastro-intestinal function, and especially intestinal putrefaction; and (6) the products of perverted metabolism.

The Combined Method of Treatment in the Arrest and Cure of Tuberculosis.—Dr. H. B. Weaver, of Asheville, N. C., stated, among other things, that in order to wage a successful warfare against tuberculosis and prevent its spread, the method which was pointed out by nature consisted in increasing as far as possible the organism. All efforts, therefore, should be directed toward that goal. As only two per cent. of tuberculous patients were treated in sanatoria, that method could not now bring the desired relief. Ninety-eight per cent. of patients were treated in their homes. Therefore, the general practitioner, as remarked by Osler, was, after all, the man behind the gun in this warfare, and to him, and through him, we must look for ultimate success. Tuberculosis would only then be vanquished when it shall have become possible to strengthen the organism and assist with specific powers which will render it immune against the disease.

The Treatment of Tuberculous Pleurisy with Effusion.—Dr. Theodore Potter, of Indianapolis, Ind., submitted for consideration the following propositions: (1) That the profession had gone too far in accepting the general principle and following the general practice that pleural serous effusions, unless they showed a tendency to early absorption, should be removed. (2) Granting that in the majority of such cases pleurisy was the dominant feature and removal of the fluid the proper procedure, and that such removal would probably tend to arrest the pleural tuberculosis, which was usually present, nevertheless the best results ought to be obtained by dealing with each case upon its own merits. (3) In cases in which the pleurisy was the sole or dominant feature, the removal of the fluid was the proper treatment; and in proportion to the accuracy of differentiation between the pleural and the pulmonary disease would be the promise of good results by removal of an effusion. (4) In cases in which tuberculosis of the lung was evidently or probably the overshadowing feature, a conservative course as regards the removal of a serous effusion was the proper one. In some cases the fluid had best be left to nature to take care of, with the hope that the compression, immobilization and physiological quietude of the tuberculous lung might tend to arrest the disease. In other cases of this type the removal of the fluid should be undertaken only upon a deliberate judgment, after due consideration.

Tuberculosis in General Practice.—Dr. Hugh A. Cowing, of Muncie, Ind., said that in his relation to tuberculosis the general practitioner should exercise great care in physical examination. He should strive to make an early diagnosis. He should carry a life-saving knowledge into the tuberculous home; improve its hygiene, and teach sanitation. He should employ the pure-air treatment. The method would vary to suit the individual case and condition. He should co-operate with health boards, and report cases. He should count the cost before sending the patient to a health resort. He should study health resorts and sanatoriums, and visit them, if possible. He should oppose quack consumption cures and quack doctors who "cure consumption." He should influence the press for sanitation. He should fight patent medicines. He should expose Christian Science and kindred fads that rob the consumptive of his chance for life. He should endeavor to seek legislation for sanitary advancement. He should help to popularize the consumptive sanatorium and health farm. Membership in a society for the prevention of tuberculosis would make the physician's work more effective.

The Management of Neurasthenics.—Dr. H. A. Rodebaugh, of Columbus, Ohio, said that an individual became neurasthenic only after having suffered from some of the psychoneuroses, the latter having been caused by traumatism, by disturbed metabolism, or by peripheral nerve irritation. Heredity, occupation on environment could hardly be considered etiological factors without further specification. Neurasthenia should be considered a mental, rather than a physical, disease. Mental symptoms often persisted after removal of all physical causes, and could only be relieved by psychic treatment. Mental hygiene was both preventive and curative. The neurasthenic should be taught that a healthy mental attitude conduced to bodily health.

Auto-Intoxication.—Dr. D. L. Field, of Jeffersonville, Ind., read a paper on this subject. After referring to the theories and definitions of auto-intoxication by Bouchard and others, the author said that the part played by the intestinal emunctories in the elimination of certain poisonous substances was attested by the commonly fetid stools of persons who frequented post mortems. The fetid character recalled the putrid odor of the emanations from the cadaver. If poisonous products had been absorbed, an effort should be made to destroy them. The liver

had the power of arresting poisons. It withdrew them from the intestines and eliminated or destroyed them. One should, therefore, stimulate its action by proper therapeutic measures. If the poisons had escaped the liver, they should be eliminated by the skin, the lungs, the intestines and the kidneys. If all these attempts failed, one should have recourse to certain antidotes which tended to counteract the physiological effects of the poisons which menaced the system. As a striking example he mentioned the antagonistic properties of poisons in atropine and pilocarpine. The strength of the patient should not be neglected, so that he might have time to eliminate the poisons. Sometimes it was only necessary to keep a patient alive a few minutes more, in order to save him. We could not provide him with radical force, and what was required was active force. Thus one was led to administer stimulants which might awaken the forces remaining latent. Cases were cited in point.

Some Remarks on the Pathology of Epilepsy.—Dr. Marc Ray Hughes, of St. Louis, Mo., showed that each epileptic stage had a distinct pathology, and the entire category for classification of epilepsy, including the psychical varieties, had one common pathology or gross structural change, and that this structural change, whether idiopathic or organic, had to do largely with the movements of the centrifugal and centripetal mental forces as they were found in the psychical equivalent of epilepsy—dual consciousness, obliviousness and allied states of mental eclampsia.

History and Treatment of Epilepsy.—Dr. John W. Selman, of Greenfield, Ind., after recounting at length the history of this disease, said that every physician acknowledged that the great cause of epileptic convulsions was the sudden liberation or explosion of nerve force which swept everything before it. Epilepsy and other diseases might exist together, and for this reason the prognosis and diagnosis were to be carefully formed and given. January 2, 1905, a man, twenty-eight years old, was brought to him, who was having epileptic seizures five and six times a week. There was no aura. Like a flash he was in hard convulsions. The general appearance of the patient indicated great anemia, malnutrition, with diarrhea. The author at once used subcutaneous injections of normal saline solution, with the bitter tonics and arsenic, and at the expiration of ten days a great change in his condition was noticeable, and in three months he returned home apparently well. The causes of epilepsy were toxic, reflex and traumatic. The treatment of the disease was as various as the disease was variable in its forms and phases, and it should in nearly all cases resolve itself into three divisions, consisting in the removal of any exciting cause, in the checking of the convulsive tendency already set up, and in the prevention of any further attacks by suitable drugs or other measures of relief. The treatment was governed largely by the case and was medicinal or operative, according to the causal factors at work. In idiopathic epilepsy medicinal means should be followed; while in a case resulting from traumatism the depressed bone, abscess or tumor should be removed.

The Cigarette: Its Relation to Mental and Nervous Diseases.—Dr. W. B. Fletcher, of Indianapolis, Ind., quoted extensively from articles by physicians and prominent laymen on the cigarette habit, and said that he had sometimes asked himself if the members of the medical profession were not largely responsible for the wide-spread prejudice against the cigarette. It was so much easier to agree with the grief-stricken mother in assigning the cause of the loved one's downfall to the innocent habit of cigarette smoking than to say to her frankly the real cause which examination had revealed or which had been imparted under the seal of professional confidence. In the past twenty-two years he had examined over twelve hundred cases of nervous disease and insanity brought to the Central Hospital for the Insane, or in his private practice where the cause of the malady was given by their friends as the cigarette habit. In not one case had he reason to believe that tobacco had anything to do with the causation of the disease. They were all young men and some of them insane without doubt. Some of them smoked cigarettes to excess, but their insanity was only a cause of their excess, and not the excess the cause of the insanity. Many of them were simple cases of hebephrenia, with a cigarette attachment, so to speak. One poor fellow, sixteen years of age, and at the time in acute mania, had been severely punished by his father to "beat out the cigarette habit." After three months he recovered and proved to be an unusually bright and truthful boy. He acknowledged that he had smoked three cigarettes in his life just before his mind gave way from overwork in the harvest field. Some of the cases were tuberculosis of the brain; but he thought he was safe in saying that fully 90 per cent. were young fellows reared in idleness, who had acquired other habits of vulgar and vicious companions, which were reducing their vitality and sapping their brain, and the cigarette was used as a cover by patient, parent and friends as a scapegoat, or an excuse to hide their shame.

A Plea for More Moral Restraint for Students in Medical Colleges.—Dr. John M. Batten, of Downington, Pa., said there were three classes of students at medical colleges: First, those who had good morals, were industrious and ambitious, and had a high ideal objective point. Second, those whose morals were questionable, and were not as industrious as they should be, and were lacking in ambition, and consequently their ideal objective point was only mediocre. This class of students was easily led into evil habits. Third, there was a class of students who might have plenty of means furnished them for necessary and other expenses. Their ideal objective point in life was not high. Their morals were corrupt, and they had not been taught the value of economy. This class of students schemed to do evil and endeavored to corrupt others with whom they associated. He thought no medical college should have a charter that could not and would not provide for sufficient moral protection over the students who attended such institution.

The Tonic Alterative Action of Copper and Arsenic in Primary and Secondary Anemic States.—Dr. George F. Butler, of Chicago, said that arsenic had a very decided action on tissue change and markedly affected the glandular, nervous, respiratory and cutaneous systems. Copper was reputed to be a violent poison, yet, except so far as its toxic effects as a foreign body in the eye were concerned, this repute was decidedly undeserved. Copper was recommended as an alterative tonic useful in epilepsy, chorea and other spasmodic conditions, especially those connected with debility, by the older authors, and later therapeutists sustained this old repute of copper. Several authorities were quoted to the effect that the drug, in small doses, stimulated both

the heart and the capillary circulation, and was a general nerve tonic. As to the preparation to be employed, all agreed that while copper sulphate was of value, it had at times unexpected dangerous untoward effects when the point of saturation was reached. These effects, through the influence of the drug on the vascular system, often took the direction of cardiac neuralgias and pseudo-anginas. The double salts of copper, in small doses, exerted a cardiac action similar to that of digitalin, strophanthus, helleborein, etc. Hare preferred copper arsenite. He had found that under its use digestion and nutrition improved. It was superior to Fowler's solution in chorea and similar neuroses. In toxemic conditions, like secondary malarious manifestations, with the resultant pallor, copper and arsenic were of decided value. Cases in which the periodic tendency had disappeared, improved decidedly under copper and arsenic, whereas quinine and iron were worse than useless. The influence of arsenic was very marked on chronic rheumatism and so-called rheumatic gout, neuralgias of various sorts, in tic, and hemicrania, as well as in angina pectoris, chorea, epilepsy and asthma. In certain of the gouty bronchites, at the onset of phthisis, in imperfectly cleared up pneumonic lung consolidation, arsenic acted sometimes with remarkable efficiency. The influence of both drugs on the liver, whose double functions were so necessary to the tissue changes of the system, showed that both played a part in assisting assimilation, and at the same time destroying waste products.

The Claims of the Adolescent.—Dr. Frank P. Norbury, of Jacksonville, Ill., said that the claims of the adolescent for recognition by the medical profession were genuine, not hypothetical, and involved three important considerations: (1) Physiological (a study of growth, development, sex differentiation). (2) Psychological—normal and morbid, involving honest endeavor of the physician to see the real needs of the individual. (3) Pedagogical—training and treatment to go together.

All of these considerations showed that a demand existed for qualified men to consider earnestly the problems of mind and body of this period.

The following papers were likewise read: "Heads and Tales," by Dr. T. B. Greenley, of Meadow Lawn, Ky.; "Simple Eye Conditions That Should Be Familiar to Every Physician," by Dr. Mark P. Stevenson, of Akron, Ohio; "Some Interesting Problems in Urinary Diagnosis," by Dr. Arthur R. Elliott, of Chicago; "Concerning Hepatic Uremia and Its Treatment," by Dr. Alfred C. Croftan, of Chicago; "Enterotoxismus (Auto-Intoxication) from Meat," by Dr. Fenton B. Turck, of Chicago; "The Leucocytes in Pertussis," by Dr. F. S. Churchill, of Chicago; "Remarks on Poliomyelitis," by Dr. Hugh T. Patrick, of Chicago; "Demonstration of Sleep-Inducing Method," by Dr. J. B. Learned, of Northampton, Mass.; "Some Rare Sequelae of Syphilis," by Dr. Henry J. Scherck, of St. Louis, Mo.

Starvation Operation.—This autumn Dr. Dawbarn met Dr. Ernest Laplace, of Philadelphia, the well-known surgeon, just back from Paris. He said that he had there seen Professor Doyen do the starvation operations on more than one patient with cancer of the tongue, and that it is now in frequent use among Parisian surgeons. They realize that it is not permanently curative of cancer, but Dr. Laplace says they claim to get more effective results from X-ray and antitoxin treatments when used immediately after the starvation operation.

BOOK REVIEWS.

THE MEDICAL EPITOME SERIES.—PRACTICE OF MEDICINE. By HUGHES DAYTON, M.D., Principal to the Class in Medicine, New York Hospital Out-Patient Department; Clinical Assistant in Medicine, Vanderbilt Clinic, College of Physicians and Surgeons, Columbia University. Series edited by VICTOR COX PEDERSON, A.M., M.D. Lea Brothers & Company, New York and Philadelphia.

WHILE rather critical of a "microscopic" text-book, we cannot but commend the author for the skill in abstracting shown in this book. Like the rest of the Medical Epitome Series, it is a pocket manual, intended as a rapid review guide, and we cannot therefore expect it to include much by way of explanation or discussion. But the excellent classification of Osler has been followed quite closely, the introductory remarks on immunity have been revised by Prof. Prudden, and space has been gained by the omission of diseases of larynx, pharnyx and tonsils, which are treated of in another manual of this series. So the book is a veritable *multum in parvo*, and, if the desire for brevity has caused the omission of a fair number of important items, yet the book can be commended to the student who knows the larger books and will use this merely as an aid to review. Certainly it would have been difficult to get more matter into the same space, and the selection of material is good.

AN INTRODUCTION TO PHARMACOGNOSY. By SMITH ELY JELLIFFE, M.D., Ph.D., Professor of Pharmacognosy and Instructor in Materia Medica and Therapeutics in Columbia University (College of Physicians and Surgeons), New York. Fully illustrated. W. B. Saunders & Company, Philadelphia, New York and London.

THOUGH of more immediate need to the pharmacist or to the buyer and collector of crude drugs, still there is much of value to be gain from these pages by physicians, chemists, and those engaged in medicolegal work. The classification is into Animal Drugs, Vegetable Drugs without Organic Structure (sugars, gums, resins, etc.), and Vegetable Drugs with Organic Structure (roots, barks, leaves, etc.). In a very brief, but at the same time, very efficient manner, each drug is considered as regards its Source, its appearance as it comes to market, its adulterants or substitutes, its microscopic appearance, and the chemistry of its constituents (such as alkaloids, oils, resins, gums, etc.). These plant constituents and their properties are also taken up in groups in a separate portion of the books, and considerable space is given to the identification of drugs in powdered form. The illustrations are admirably chosen, many of them original; and especially helpful are those of the author showing the microscopic appearance of the various drugs when powdered. There are but few works on this subject that are available for any but specialists, though there is much investigation being carried on in this field. The author is, therefore, to be congratulated on his success in gathering the newer findings and making them available for all.

INTERNATIONAL CLINICS, a Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, by leading members of the medical profession throughout the World. Edited by A. O. J. KELLY, A.M., M.D., Philadelphia. With regular correspondents in Montreal, London, Paris, Ber-

lin, Vienna, Leipsic, Brussels and Carlsbad. Volume II. Fifteenth Series, 1905. J. P. Lippincott Company, Philadelphia and London.

THE present number of the International Clinics contains at least one article that every practitioner of medicine in this country should read. The title of it is "The Diagnosis of Incipient Thoracic Tuberculosis," by Robert N. Willson, M.D. Over fifty pages altogether are devoted to this one subject, but every bit of it is worth reading, and the space could not have been given up to more valuable clinical material. What might well have served as the text for the volume is a quotation from Dr. Trudeau, to whom all of us, as well as the author, must give credit for the inspiration to study along this line. Dr. Trudeau says: "The average medical man's idea of tuberculosis only relates to the disease after the rational and physical signs have become well marked." Another good authority on tuberculosis has said: "That it is almost hopeless to expect that the general practitioner shall diagnose tuberculosis of the lungs in the early stages of the disease. Sometimes there is only disturbance of the pulse, with the history of exposure to indicate incipient tuberculosis. Sometimes there is slight disturbance of temperature; sometimes it is only a persistent cough, for which no good reason can be found. The first symptoms differ very much in different cases, and no single pathognomonic sign can be given. There are a number of other good articles, but this is the one likely to do most good in the present stage of our knowledge of diagnosis and treatment of tuberculosis.

EYE, EAR, NOSE AND THROAT NURSING. By A. EDWARD DAVIS, A.M., M.D., Professor of Diseases of the Eye in the New York Post-Graduate School and Hospital, and BEAMAN DOUGLAS, M.D., Professor of Diseases of the Nose and Throat in the New York Post-Graduate Medical School and Hospital. F. A. Davis Company, Publishers, Philadelphia.

THIS book was written for nurses, and will serve its purpose well. It is thorough and well arranged. The style is clear and the information it provides is indispensible for all who would assume the great responsibilities entailed in caring for those afflicted with diseases of the eye and ear, and especially after operations.

It is right that a trained nurse should be taught all that her time and capacity will permit her to learn about her work, even though such knowledge may seem to have no practical bearing on her work. Even the principles of operations and the theories of disease can only add to the intelligent co-operation which the physician has a right to expect. In these respects the book deserves commendation, and in its specific directions it leaves nothing to be desired.

THE INTESTINAL CATARRHS, a Clinical Study of Colitis, Appendicitis and their allies, with a special new section on Sprue. By EDWARD BLAKE, M.D., member of the Royal College of Surgeons, the French Hygienic Society, etc. H. J. Glaisher, London; W. T. Keener & Co., Chicago.

THE author of this work has written books on a variety of medical subjects, from "Ankle-Strain to Heart-Hurry," and the "Study of the Hand for Indications of Local and General Disease." But forgotten are his former loves in his enthusiasm, and all-absorption in the present one.

Intestinal catarrh is now the alpha and omega, the cause and result of all the troubles to which flesh is heir. Among other numerous evils which may follow its development are rickets, dilated stomach, arteriosclerosis, exophthalmic goiter and senile enuresis. Much that is good and up-to-date in this book is so sadly mixed with the fanciful that we dare not trust any of the author's conclusions. Where, for example, could he get the idea that the cramps which follow the eating of unripe apples may be due to the irritating effects of malic acid in the anterior cornua of the spinal cord; or on what pathological basis can he say "It is in part because colitis is a descending disease that the right kidney is the first to be displaced. It is the first to be reached, and is, therefore, the first to suffer."

The style, too, with language a little flowery, statements overdrawn, many departures from the subject in hand to inculcate a moral or to propagate some unallied fad of the author, and above all, his martyr-like attitude of doing what he does for humanity's sake, forcibly remind us Americans of our political "spell-binder."

PRACTICAL MASSAGE IN TWENTY LESSONS. By HARTVIG NISSEN, Instructor and Lecturer in Massage and Gymnastics at Harvard University Summer School, etc. Author of Swedish Movement and Massage Treatment. F. A. Davis Company, Philadelphia.

The author has had a wide experience teaching massage for several years at the Harvard University Summer School and to private pupils for upward of thirty years. The method which he advises is a combination of what his expeience has taught him to be the best and most useful manipulations and movements out of the many taught and practised. The little book is remarkably well printed and put together. The illustrations are simple but direct and self-explanatory. Almost all of them are original, and not a few are photographic. The book is divided into twenty lessons, each one being a complete paper in itself and full of intensely practical and useful information. With such a great number of "fake" massage operators flooding the country, as yet unfortunately entirely unrestricted in their activities, a prey upon the commonwealth and the physician, the arrival of this little book is most opportune, and it is no exaggeration to say that if physicians were to read through these twenty lessons, which could easily be done in three or four hours' time, they would be better able to protect their patients from the worthless so-called "treatments" inflicted by incompetent operators. It is therefore a great pleasure to commend this little book to all physicians having the welfare of their patients at heart.

THE DIVISION OF SURGERY, of the Medical School of Harvard University, Bulletin No. 4.

It is refreshing to look over this bulletin, devoted to research work in surgery, a subject that until a very recent date has been grossly neglected in this country, except in the case of one or two progressive universities. The Harvard Medical School is to be congratulated on presenting to the public its bulletin of 88 pages so well edited, so profusely illustrated, and, needless to say, containing a mass of reliable surgical new thought and work. It is to be hoped that the time is not far distant when the other medical schools of the country will be able to follow the lead of Harvard and of Hopkins in publishing like bulletins.

Gould presents an improved technic for end-to-end anastomosis. He also shows an admirably illustrated method of performing gastro-enterostomy. Murphy,

whose work in positive pressure for intrathoracic operations is so well known, contributes some observations on drainage of the peritoneal cavity. It is impossible, in a short review, to call attention to all of the papers, but no report would, in any sense, be complete without giving space to the Cannon-Blake observations on gastro-enterostomy and pyloroplasty. They have shown that there is no reason to suppose that "drainage from the stomach occurs in the sense of gavity drainage. Their further conclusions, which are too extensive to be cited here, are of such nature as to modify the entire subject of gastric surgery, particularly in reference to drainage.

Superstition in Medicine. By Prof. Dr. Hugo Magnus. Authorized translation from the German. Edited by Julius L. Salinger, M.D., late Assistant Professor of Clinical Medicine, Jefferson Medical College. Physician to the Philadelphia General Hospital, etc. Funk & Wagnalls Company, New York and London.

Professor Magnus has made not only an interesting but a valuable book. To the ordinary reader, however, it cannot help but appear that much more good might have been accomplished without arousing the feeling of opposition that will come in many minds because the superstitions of religion as well as medicine are included in this volume. Religion has had its superstitions and they have been much discussed, but medicine, even when pretending to be most scientific, has fairly reeked with superstitions, some of them of the most absurd kind. A detailed history of these would have been a precious lesson for every generation of medical men, not to be overhasty in accepting even what looked like scientific truth until it had been fairly tested by the only proper control, experience. Dr. Salinger has distinctly added to the value of the book by his chapter upon medical superstition and insanity. The bibliography in the middle of the volume is a precious addition and a mine of information.

An Atlas of Dermatology, Showing the Appearances, Clinical and Microscopical, Normal and Abnormal of Conditions of the Skin. By Morgan Dockrell, M.A., M.D. (Dub. Univ.), Senior Physician and Chesterfield Lecturer on Dermatology to St. John's Hospital for Diseases of the Skin. Longmans, Green & Co., London, New York and Bombay.

This atlas will doubtless prove of great practical utility to the ordinary practitioner student of skin diseases who has not time in the midst of a busy practice, especially in a country town, to make himself familiar with all the types of dermatological lesions. The arrangement of the volume is to be especially recommended. The picture of the patient with the lesion is given on the upper half of the page and the plate with the microscopic details of the lesion on the lower half, both in colors. There is just sufficient letter press to describe the illustrations without wasting any words or leaving anything obscure. Mainly the ordinary lesions of the skin diseases are pictured, but some of the more unusual types are also to be found.

There is an excellent example of acne keloid, as it occurs sometimes at the back of the neck. There is also a good illustration of hyaline degeneration of the skin, a condition at one time taken to be colloid millium, but now known to differ from it, since in the one the material in the little bullæ is hyaline and not colloid, as in the other case. There is also a good plate of adenoma sebaceum.

BOOKS RECEIVED.

Transactions of the American Medico-Psychological Association. 8vo, 471 pages.

Ophthalmic Neural Myology. By Dr. G. C. Savage. 8vo, 221 pages. Nashville, Tenn.

Vital Questions. By Dr. H. D. Chapin. 12mo, 190 pages. Thomas Y. Crowell & Co., New York.

Handbook of Physiology. By Dr. A. Flint. 8vo, 877 pages. Illustrated. The Macmillan Co., New York.

Carbonic Acid in Medicine. By Dr. A. Rose. 12mo, 260 pages. Illustrated. Funk & Wagnalls, New York.

A Compend of Histology. By Dr. H. E. Radasch. 12mo, 304 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.

The Medical Diseases of India. By Dr. F. M. Sandwith. Volume I. 8vo, 316 pages. Illustrated. Henry Kimpton, London.

Nervous Diseases of Childhood. By Dr. B. Sachs. Second edition. 8vo, 571 pages. Illustrated. Wm. Wood & Co., New York.

Syllabus of Materia Medica. By Dr. Warren Coleman. Second edition. 12mo, 189 pages. Wm. Wood & Co., New York.

Transactions of the Rocky Mountain Interstate Medical Association. 1904. 8vo, 216 pages. Illustrated. Denver, Colo.

Laboratory Guide in Bacteriology. By Dr. P. G. Heinemann. 12mo, 143 pages. Illustrated. University of Chicago Press, Chicago.

The Eye, Its Refraction and Diseases. By Dr. D. E. Gibbons. Volume II. 8vo, 630 pages. Illustrated. The Macmillan Co., New York.

Text Book of Practical Medicine. By Dr. W. Bain. 8vo, 1011 pages. Illustrated. Longmans, Green & Co., New York, London and Bombay.

Saunders' Pocket Medical Formulary. By Dr. W. N. Powell. Seventh edition. 301 pages. W. B. Saunders & Co., Philadelphia and London.

Color Vision and Color Blindness. By Dr. J. E. Jennings. Second edition. 8vo, 132 pages. Illustrated. F. A. Davis Co., Philadelphia.

Materia Medica and Pharmacy. By Dr. R. W. Wilcox. Sixth edition. Volume I. 8vo, 624 pages. P. Blakiston's Son & Co., Philadelphia.

Progressive Medicine. Volume III. September, 1905. 8vo, 298 pages. Illustrated. Lea Brothers and Company, Philadelphia and New York.

Surgical Aspects of Digestive Disorders. By Drs. J. G. Mumford and A. K. Stone. 8vo, 396 pages. Illustrated. The Macmillan Co., New York.

Immunity in Infective Diseases. By Dr. E. Metchnikoff. Translated by Dr. F. G. Binnie. 8vo, 591 pages. Illustrated. The Macmillan Co., New York.

Methods of Morbid Histology and Clinical Pathology. By Drs. I. W. Hall and G. Herxheimer. 8vo, 290 pages. Illustrated. J. B. Lippincott Co., Philadelphia.

Transactions of the Western Surgical and Gynecological Association. Fourteenth annual meeting 8vo, 4747 pages. American Medical Association Press, Chicago.

A Manuel of Diseases of the Nose and Throat. By Dr. C. G. Coakley. Third edition. 8vo, 594 pages. Illustrated. Lea Brothers & Company, Philadelphia and New York.

National Standard Dispensatory. By Drs. H. A. Hare, C. Caspari, H. H. Rusby, J. F. Geisler, E. Kremers and D. Base. 8vo, 1860 pages. Illustrated. Lea Brothers & Company, Philadelphia and New York.